NETGEAR®

JNR1010v2 N150 Wireless Router

User Manual

Support

Thank you for selecting NETGEAR products.

After installing your device, locate the serial number on the label of your product and use it to register your product at *https://my.netgear.com*. You must register your product before you can use NETGEAR telephone support. NETGEAR recommends registering your product through the NETGEAR website. For product updates and web support, visit *http://support.netgear.com*.

Phone (US & Canada only): 1-888-NETGEAR.

Phone (Other Countries): Check the list of phone numbers at *http://support.netgear.com/general/contact/default.aspx*.

Compliance

For regulatory compliance information, visit *http://www.netgear.com/about/regulatory*.

See the regulatory compliance document before connecting the power supply.

Trademarks

Contents

Appendix A   Supplemental Information

Hardware Setup

1

Get to know your router

If you have not already set up your new router using the installation guide that comes in the box, this chapter walks you through the hardware setup. *Chapter 2, Get Started with NETGEAR genie*, explains how to set up your Internet connection.

This chapter contains the following sections:

- *Unpack Your Router*
- *Hardware Features*
- *Position Your Router*
- *Cable Your Router*
- *Verify the Cabling*

For more information about the topics covered in this manual, visit the support website at *http://support.netgear.com*.

Firmware updates with new features and bug fixes are made available from time to time at *downloadcenter.netgear.com*. Some products can regularly check the site and download new firmware, or you can check for and download new firmware manually. If the features or behavior of your product does not match what is described in this guide, you might need to update your firmware.

Unpack Your Router

Open the box and remove the router, cable, adapter, and installation guide.

Router   **Power adapter**

Figure 1. Package contents

Your box contains the following items:

- JNR1010v2 N150 Wireless Router
- AC power adapter (plug varies by region)
- Installation guide

Hardware Features

Before you cable your router, take a moment to become familiar with the label and the front and back panels. Pay particular attention to the LEDs on the front panel.

Front Panel

The router front panel has the following status LEDs:

Figure 2. Front panel

Table 1. Front panel LED descriptions

LED	Description
Power	• **Solid green**. The power is on, and the router is ready. • **Blinking green**. A firmware update is in progress. • **Off**. Power is not supplied to the router.
Internet	• **Solid green**. An IP address was received; the router is ready to transmit data. • **Off**. No Ethernet cable is connected between the router and the modem.
WiFi	• **Solid green**. The wireless radio is operating. • **Off**. The wireless radio is off.
Ethernet ports 1–4 1 2 3 4	• **Solid green**. The Ethernet port has detected a 100 Mbps link with an attached device. • **Off**. The Ethernet port has not detected a link with an attached device.

Back Panel

The back panel has the following ports, button, and connector:

WPS/Reset button

AC power connector

Ethernet ports **Internet port**

Figure 3. Back panel

Table 2. Back panel port, button, and connector descriptions

Port or Connector	Description
Ethernet ports	Four local area networks (LAN) 10/100 Mbps Ethernet ports for connecting the router to your local computers.
Internet port	Ethernet port for connecting the router to a cable broadband modem or DSL broadband modem. The Internet port is also referred to as the WAN port.

Table 2. Back panel port, button, and connector descriptions (continued)

Port or Connector	Description
AC power connector	AC power connector to connect the power adapter to the router.
WPS/Reset button	This button is a WPS and Reset button: • WPS button to connect computer or WiFi devices to the router's network. For more information, see *Wi-Fi Protected Setup Method* on page 23. • Reset button to return the router to its factory settings. For more information, see *Factory Settings* on page 90.

Label

The label of the router shows the default login information, default WiFi network name (SSID), network key (also referred to as wireless network password or passphrase), serial number, MAC address, and other information.
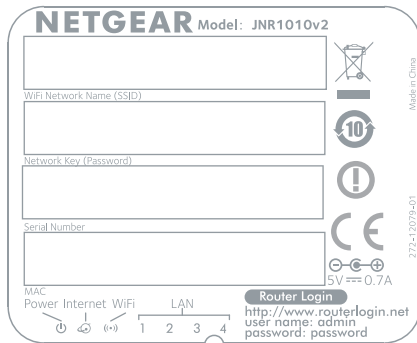
Figure 4. Label on the back panel

Position Your Router

The router lets you access your network anywhere within the operating range of your wireless network. However, the operating distance or range of your wireless connection can vary significantly depending on the physical placement of your router. For example, the thickness and number of walls the wireless signal passes through can limit the range.

Additionally, other wireless access points in and around your home might affect your router's signal. Wireless access points are routers, repeaters, WiFi range extenders, or any other device that emits a wireless signal for network access.

➢ **To position your router:**

1. Place your router near the center of the area where your computers and other devices operate, and within line of sight to your wireless devices.

2. Make sure that the router is within reach of an AC power outlet and near Ethernet cables for wired computers.

3. Place the router in an elevated location, minimizing the number walls and ceilings between the router and your other devices.

4. Place the router away from electrical devices such as these:
   • Ceiling fans
   • Home security systems
   • Microwaves
   • Computers
   • Base of a cordless phone
   • 2.4 GHz cordless phone

5. Place the router away from large metal surfaces, large glass surfaces, and insulated walls such as these:
   • Solid metal door
   • Aluminum studs
   • Fish tanks
   • Mirrors
   • Brick
   • Concrete

➢ **To prepare your router for installation:**

1. Carefully peel off the protective film covering your router.

2. Place your router in a suitable area for installation (near an AC power outlet and accessible to the Ethernet cables for your wired computers).

Cable Your Router

The installation guide that came in the box has a cabling diagram on the first page. This section describes how to connect the router, the computer, and the cable or DSL broadband modem, and provides detailed illustrations.

1. Unplug and turn off the cable or DSL broadband modem.

2. If your modem has a backup battery, remove it.

3. Locate the Ethernet cable (**1**) that connects your computer to the modem.
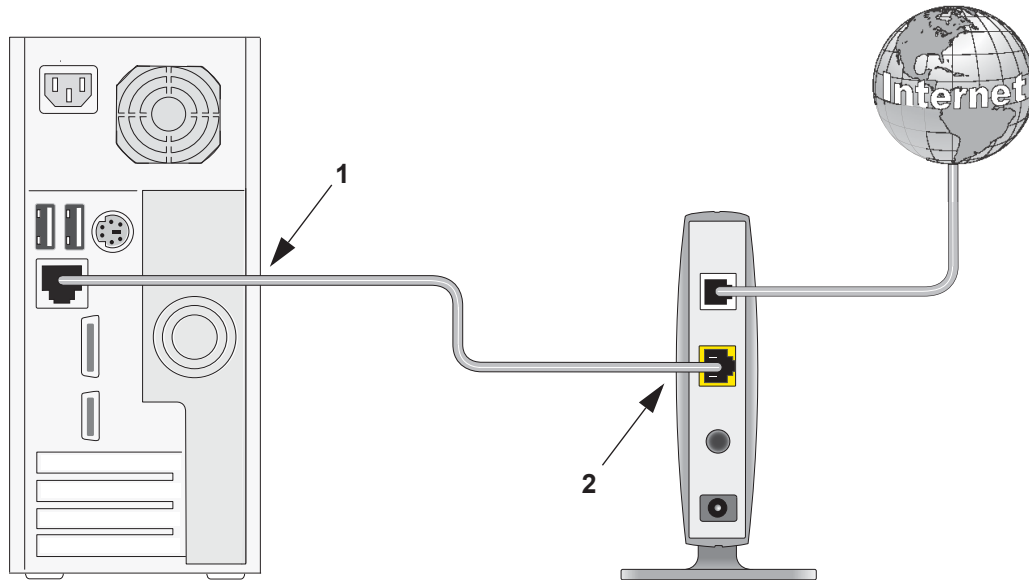
4. Disconnect the cable from the modem (**2**).

   You connect it to the router later.

5. Insert an Ethernet cable into your modem and into the router's Internet port.

(Not included)
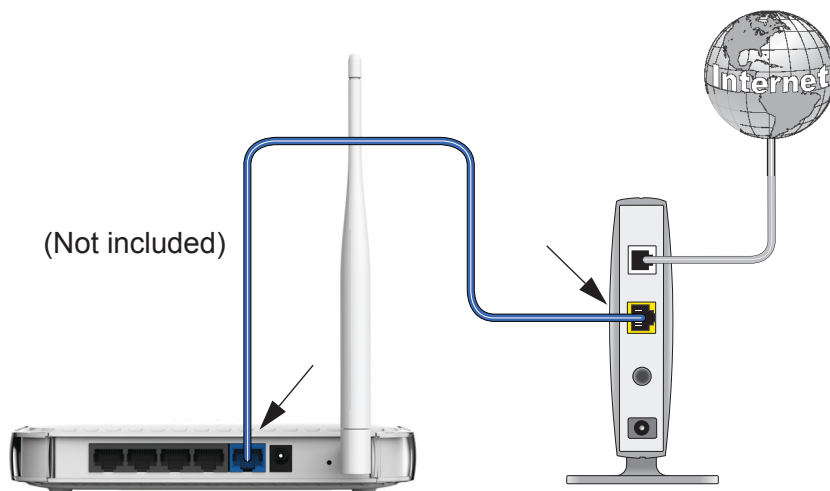
6. Connect a computer or wireless device to the router.

You have two options:

- **Connect with an Ethernet cable**. Securely insert the cable that you removed from the modem in *Step 4* into one of the router's Ethernet ports.

- **Connect without an Ethernet cable**. For more information, see *Add Wireless Devices or Computers to Your Network* on page 23.
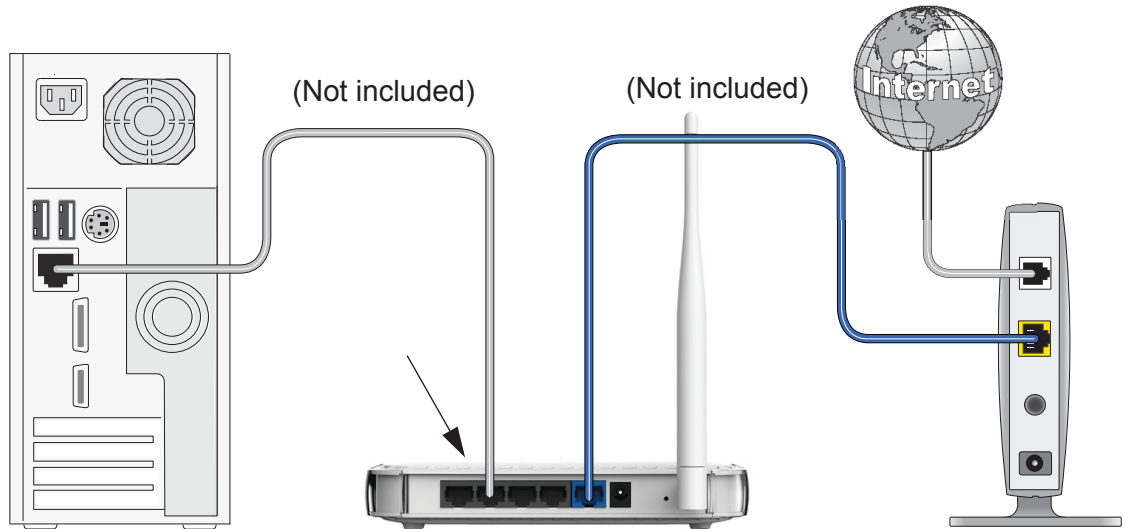
Your network cables are connected and you are ready to start your network. It is important that you start your network in the correct sequence.

➢ **To start your network:**

1. Power on the modem.

2. After the modem turns on, connect the router's power adapter to an AC outlet and then to the AC power connector on the back of the router.

Verify the Cabling

Verify that your router is cabled correctly and the cables are attached securely by checking the router LEDs:

- The Power LED ⏻ is solid green when the router is turned on.

- The WiFi LED is solid green.

- The Internet LED is solid green.

- The Ethernet LEDs (1 through 4) ① ② ③ ④ are solid green or solid amber for any computers cabled to the router by an Ethernet cable.

Get Started with NETGEAR genie

2

Connect to the router

This chapter explains how to use NETGEAR genie to set up your router after you complete cabling as described in the installation guide and in the previous chapter in this book.

This chapter contains the following sections:

- *Router Setup Preparation*
- *Types of Logins and Access*
- *NETGEAR genie Setup*
- *Log In to Your Router After Installation*
- *Upgrade Router Firmware*
- *BASIC Home Screen*
- *Change the Password*
- *Password Recovery*
- *Add Wireless Devices or Computers to Your Network*

Router Setup Preparation

You can set up your router with NETGEAR genie automatically, or you can use the genie menus and screens to set up your router manually. However, before you start the setup process, you must have your ISP information on hand and make sure that the laptops, computers, and other devices in the network have the settings described here.

Use Standard TCP/IP Properties for DHCP

If you set up your computer to use a static IP address, you must change the settings so that it uses Dynamic Host Configuration Protocol (DHCP).

Gather ISP Information

For DSL broadband service, when your Internet service starts, your Internet service provider (ISP) typically gives you all the information needed to connect to the Internet. You might need this information to set up the router to use your Internet service. If you cannot locate this information, ask your ISP to provide it. When your Internet connection is working, you no longer need to launch the ISP login program on your computer to access the Internet. When you start an Internet application, your router automatically logs you in. You might need the following information to set up your router:

- The ISP configuration information for your DSL account
- ISP login name and password
- Fixed or static IP address settings (special deployment by ISP; this situation is rare)

Wireless Devices and Security Settings

Make sure that the wireless device or computer that you are using supports WPA or WPA2 wireless security, which is the wireless security supported by the router. For information about the router's preconfigured security settings, see *Basic Wireless Settings* on page 28.

Types of Logins and Access

Different types of logins have different purposes. It is important that you understand the difference so that you know which login to use when.

- **Router login**. The user name admin logs you in to the router user interface from NETGEAR genie. For more information, see *Log In to Your Router After Installation* on page 18.
- **ISP login**. The login that your ISP provided logs you in to your Internet service. Your service provider provided you with this login information in a letter or some other way. If you cannot find this login information, contact your service provider.

- **Wireless network login**. Your router is preset with a unique wireless network name (SSID) and password for wireless access. This information is on the label on your router.

NETGEAR genie Setup

NETGEAR genie runs on any device with a web browser. It is the easiest way to set up the router because it automates many of the steps and verifies that those steps have been successfully completed. It takes about 15 minutes to complete.

➢ **To use NETGEAR genie to set up your router:**

1. Connect the router to a power source.

2. Make sure that your device is connected with an Ethernet cable to your router.

3. Launch your Internet browser.

    - If you are setting up the Internet connection for your router for the first time, the browser automatically goes to http://www.routerlogin.net, and the NETGEAR genie screen displays.

    - If you already used NETGEAR genie, type **http://www.routerlogin.net** in the address field of your browser to display the NETGEAR genie screen. For more information, see *Log In to Your Router After Installation* on page 18.

4. Follow the onscreen instructions to complete the NETGEAR genie setup.

    NETGEAR genie guides you through connecting the router to the Internet.

If the browser cannot display the web page, do the following:

- Make sure that the computer is connected to one of the four Ethernet ports, or wirelessly to the router.

- Make sure that the router is running. If it is, its WiFi LED is lit.

- Close and reopen the browser to make sure that the browser does not cache the previous page.

- Browse to **http://routerlogin.net**.

- If the computer is set to a static or fixed IP address (this situation is uncommon), change it to obtain an IP address automatically from the router.

If the router does not connect to the Internet, do the following:

1. To be sure that you have selected the correct options and typed everything correctly, review the router's settings.

2. Contact your ISP to verify that you have the correct configuration information.

3. Read *Chapter 8, Troubleshooting*. If problems persist, register your NETGEAR product and contact NETGEAR technical support.

Log In to Your Router After Installation

When you first set up your router, NETGEAR genie automatically starts when you launch an Internet browser on a computer that is connected to the router.

➢ **To use NETGEAR genie again to view or change settings for the router:**

1. Launch your browser from a computer or wireless device that is connected to the router.

2. Enter **http://www.routerlogin.net** in the web browser address bar.

   A login screen displays.

3. Enter the router user name and password.

   The default user name is admin. The default password is password. The user name and password are case-sensitive.

   Note: The router user name and password are different from the user name and password for logging in to your Internet connection. For more information, see *Types of Logins and Access* on page 16.

4. Click the **OK** button.

Upgrade Router Firmware

When you set up your router and are connected to the Internet, the router automatically checks for you to see if newer firmware is available. If it is, a message is displayed on the top of the screen. The message might be *A router firmware upgrade is available*, or a similar message.

➢ **To upgrade the firmware after the router has detected newer firmware and displays a message:**

1. Click the message.

   The Firmware Upgrade Assistant displays.

2. Click the **Yes** button.

The router upgrades to the latest firmware. After the upgrade, the router restarts.

⚠️ **CAUTION:**

Do not try to go online, turn off the router, shut down the computer, or do anything else to the router until the router finishes restarting and the Power LED has been solid green for several seconds.

For more information about upgrading firmware manually, see *Manually Update the Router Firmware* on page 53.

BASIC Home Screen

The router BASIC Home screen has a dashboard that lets you see the status of your Internet connection and network at a glance. You can click any of the sections of the dashboard to view more detailed information. The left column has the menus. You can use the ADVANCED tab to access more menus and screens.

Figure 5. Router BASIC Home screen with dashboard, language, and online help

On the BASIC tab, the following items display:

- **Home**. This dashboard screen displays when you log in to the router**.**
- **Internet**. Set, update, and check the ISP settings of your router.
- **Wireless**. View or change the wireless settings for your router.
- **Attached Devices**. View the devices that are connected to your network.
- **Guest Network**. Set up a guest network to allow visitors to use your router's Internet connection.

ADVANCED tab. Set up the router for unique situations such as when remote access by IP address or by domain name from the Internet is needed. For more information, see *Chapter 6, Advanced Settings*. Using this tab requires a solid understanding of networking concepts.

Help & Support. Visit the NETGEAR support site to get information, help, and product documentation. These links work after you have an Internet connection.

Change the Password

The default password that you use to log in to the router is admin. NETGEAR recommends that you change this default password to a secure password.

Changing the default password is not the same as changing the password for wireless access. The label on your router shows your unique wireless network name (SSID) and the passphrase (also referred to as the wireless network password or network key) for wireless access (see *Label* on page 11).

➢ **To change the default password that you use to log in to the router:**

1. Log in to the router.

    For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Set Password**.

The following screen displays:

3. Type the old password and type the new password twice.

4. If you want to be able to recover the password, select the **Enable Password Recovery** check box.

***

Note: NETGEAR recommends that you enable password recovery.

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For more information, see *Password Recovery* on page 21.

5. Click the **Apply** button.

Password Recovery

NETGEAR recommends that you enable password recovery if you change the password for the router's user name of admin. Then you have an easy way to recover the password when it is forgotten. This recovery process is supported in Internet Explorer, Firefox, and Chrome browsers, but not in the Safari browser.

➢ **To set up password recovery:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Set Password**.

   The Set Password screen displays.

3. Select the **Enable Password Recovery** check box.

4. Select two security questions and provide answers to them.

5. Click the **Apply** button.

➢ **To recover your password:**

1. In the address field of your browser, type **www.routerlogin.net**.

   A login screen displays.

2. Click the **Cancel** button.

   If password recovery is enabled, you are prompted to enter the serial number of the router. The serial number is on the product label.

3. Enter the serial number of the router.

4. Click the **Continue** button.

   A screen displays requesting the answers to your security questions.

5. Enter the saved answers to your security questions.

6. Click the **Continue** button.

   A screen displays your recovered password.

7. Click the **Login again** button.

   A login screen displays.

8. With your recovered password, log in to the router.

Add Wireless Devices or Computers to Your Network

Choose either the manual or the WPS method to add wireless devices and other equipment to your wireless network. For information about how to set up a guest network, see *Guest Network* on page 35.

Manual Method

➢ **To connect manually:**

1. Open the software that manages your wireless connections on the wireless device (laptop computer, gaming device, iPhone) that you want to connect to your router.

    The wireless software scans for all wireless networks in your area.

2. Look for your network and select it. If you did not change the name of your network during the setup process, look for the default WiFi network name (SSID) and select it.

    The default SSID is on the product label on the router.

3. Enter the router wireless network password (passphrase) and click the **Connect** button.

    The default router passphrase is on the product label on the router.

4. Repeat Steps 1–3 to add other wireless devices.

Wi-Fi Protected Setup Method

Wi-Fi Protected Setup (WPS) lets you connect to a secure WiFi network without typing its password. Instead, press a button or enter a PIN. NETGEAR calls WPS Push 'N' Connect.

During the connection process, the client gets the security settings from the router so that every device in the network has the same security settings.

Some older WiFi equipment is not compatible with WPS. WPS does not support WEP security. You cannot use WPS to connect a WEP client to the router's WiFi network. WPS works only with WPA2or WPA wireless security.

➢ **To use WPS to join the wireless network:**

1. Press and hold the **WPS/Reset** button on the back of the router with the end of a paper clip or a similar object for one to three seconds.

    The WiFi LED blinks.

2. Within two minutes, press the **WPS** button on your computer wireless device or follow the WPS instructions that came with the device.

    The device is now connected to your router's WiFi network.

3. Repeat Steps 1–2 to add other WPS wireless devices.

genie BASIC Settings

3

Your Internet connection and network

This chapter describes the features that are available from the genie BASIC Home screen.

This chapter contains the following sections:

- *Internet Setup*
- *Basic Wireless Settings*
- *Attached Devices*
- *Guest Network*

Internet Setup

You can view or change ISP information.

➢ **To view or change the Internet setup:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Internet**.

   The following screen displays:

The fields that display in the Internet Setup screen depend on whether your Internet connection requires a login.

3. Select the **Yes** or **No** radio button.

   • **Yes**. Select the tunneling protocol, and enter the login name and password for your ISP. If you want to change the login time-out, enter a new value in minutes.

   • **No**. Enter the account and domain names, only if needed.

   These fields display when no login is required:

   • **Account Name (If Required)**. Enter the account name provided by your ISP. This name might also be called the host name.

- **Domain Name (If Required)**. Enter the domain name provided by your ISP.
- **Internet IP Address**:
  - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.
  - **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned to you. The gateway is the ISP router to which your router connects.
- **Domain Name Server (DNS) Address**. The DNS server is used to look up site addresses based on their names. Select one o the following radio button:
  - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns these IP addresses.
  - **Use These DNS Servers**. If you know that your ISP does not automatically transmit DNS addresses to the router during login, select this radio button, and enter the IP address of your ISP primary DNS server. If a secondary DNS server address is available, enter it also.
- **Router MAC Address**. The Ethernet MAC address used by the router on the Internet port. Some ISPs register the MAC address of the network interface card in your computer when your account is first opened. They accept traffic only from the MAC address of that computer. This feature allows your router to use your computer's MAC address (this situation is also called spoofing or cloning). Select one of the following radio buttons:
  - **Use Default Address**. Use the default MAC address.
  - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using to configure the router. To configure the router, use the computer that is registered with the ISP.
  - **Use This MAC Address**. Enter the MAC address that you want to use.

There fields display when your ISP requires a login:

- **Internet Service Provider**. As the ISP tunneling protocol, select **PPTP** or **PPPoE**.
- **Login**. Enter the login name provided by your ISP. This name is often an email address.
- **Password**. Enter the password that you use to log in to your ISP.
- **Service Name (If Required)**. Enter the service name provided by your ISP. If your ISP did not give you a service name, leave this field blank.
- **Connection Mode**. Select the one of the following connection modes:
  - **Always On**. The connection automatically starts when you turn on the router and does not time out. If the connection is terminated for some reason, the router attempts to reestablish the connection.
  - **Dial on Demand**. The connection automatically starts when outbound traffic to the Internet exists and automatically terminates when the idle time-out period is exceeded.

26

- **Manually Connect**. You connect and disconnect manually. For information about how to connect to the Internet, see *Connection Status* on page 75. The **Connect** and **Disconnect** buttons in the Connection Status screen display only when the connection mode is Manually Connect.

- **Idle Timeout (In Minutes)**. If you want to change the login time-out, enter a new value in minutes. This setting determines how long the router keeps the Internet connection active after no Internet activity from the LAN is detected. Entering a value of 0 (zero) means never log out.

- **Internet IP Address**:

   - **Get Dynamically from ISP**. Your ISP uses DHCP to assign your IP address. Your ISP automatically assigns these addresses.

   - **Use Static IP Address**. Enter the IP address, IP subnet mask, and the gateway IP address that your ISP assigned to you. The gateway is the ISP router to which your router connects.

- **Domain Name Server (DNS) Address**. The DNS server is used to look up site addresses based on their names. Select one of the following radio buttons:

   - **Get Automatically from ISP**. Your ISP uses DHCP to assign your DNS servers. Your ISP automatically assigns these IP addresses.

   - **Use These DNS Servers**. If you know that your ISP does not automatically transmit DNS addresses to the router during login, select this radio button, and enter the IP address of your ISP primary DNS server. If a secondary DNS server address is available, enter it also.

- **Router MAC Address**. The Ethernet MAC address used by the router on the Internet port. Some ISPs register the MAC address of the network interface card in your computer when your account is first opened. They accept traffic only from the MAC address of that computer. This feature allows your router to use your computer's MAC address (this situation is also called spoofing or cloning). Select one of the following radio buttons:

   - **Use Default Address**. Use the default MAC address.

   - **Use Computer MAC Address**. The router captures and uses the MAC address of the computer that you are now using to configure the router. To configure the router, use the computer that is registered with the ISP.

   - **Use This MAC Address**. Enter the MAC address that you want to use.

4. Enter the settings for the IP address and DNS server.

   The default settings usually work fine. If you have problems with your connection, check the ISP settings.

5. Click the **Apply** button.

6. Click the **Test** button.

   Your Internet connection is tested. If the router does not detect the Internet connection and the NETGEAR website does not display within one minute, see *Chapter 8, Troubleshooting*.

Basic Wireless Settings

You can view or configure the wireless network setup.

The router comes with preset WPA2-PSK security. This means that the WiFi network name (SSID), wireless network password (also referred to as the passphrase or network key), and security option (authentication and encryption protocol) are preset in the factory. You can find the preset SSID and password on the router label. The preset SSID and password are uniquely generated for every device to protect and maximize your wireless security.

> ⚠️ **WARNING:**
>
> **NETGEAR recommends that you do not change your preset security settings. If you do decide to change your preset security settings, make a note of the new settings and store it in a safe place where you can easily find it.**

Note: If you use a wireless computer to change the wireless network name (SSID) or other wireless security settings, you are disconnected when you click the **Apply** button. To avoid this situation, use a computer with a wired connection to access the router.

➢ **To view or change basic wireless settings:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Wireless**.

The following screen displays:
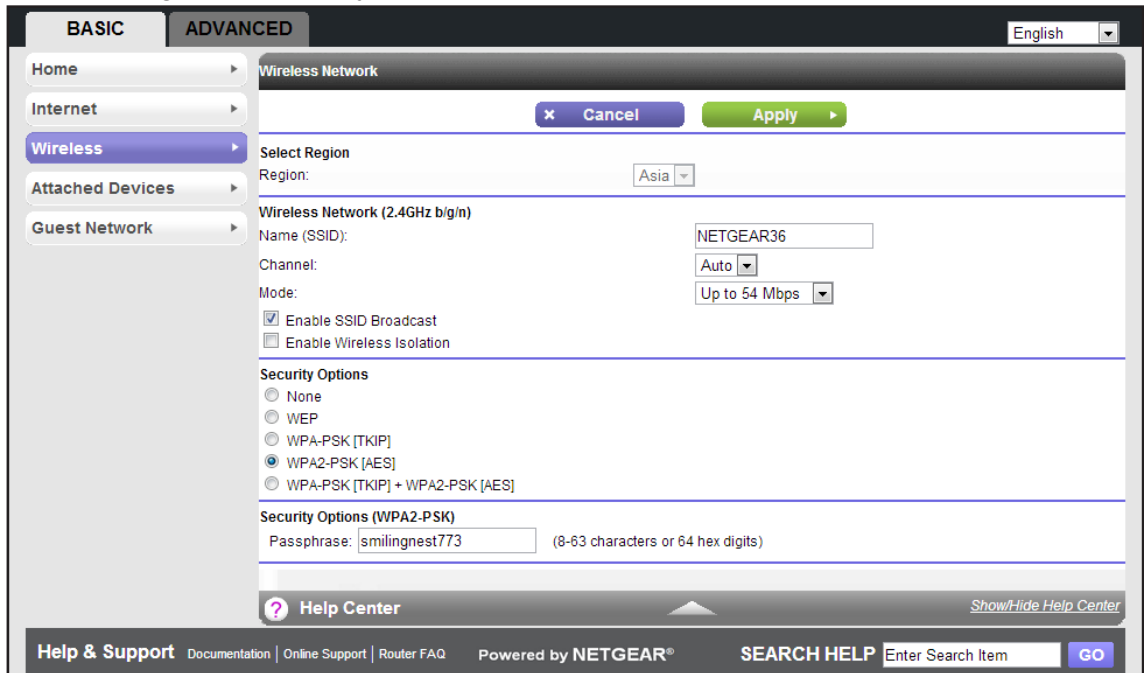
3. To specify the location where the router is used, select from the countries in the **Region** list.

In Asia, the region is fixed to Asia and is not changeable.

4. Enter the SSID in the **Name (SSID)** field.

NETGEAR recommends that you do not change the default SSID. If you do decide to change the name, enter a 32-character (maximum) name in this field. This field is case-sensitive.

5. Select the channel from the **Channel** list.

This setting is the wireless channel used by the gateway. Enter a value from 1 through 13. For products in the North America market, only Channels 1 through 11 can be operated. Do not change the channel unless you experience interference (shown by lost connections or slow data transfers). If this happens, experiment with different channels to see which is the best. The default setting is **Auto**, which means that the router selects a channel automatically.

Note: When you use multiple access points, it is better if adjacent access points use different channels to reduce interference. The recommended channel spacing between adjacent access points is five channels (for example, use Channels 1 and 6, or 6 and 11).

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6. Select the mode the **Mode** list.

Up to 150 Mbps is the default setting. The other settings are Up to 54 Mbps and Up to 145 Mbps.

- **Up to 54 Mbps**. Allows 802.11g and 802.11b wireless devices to join the network.
- **Up to 145 Mbps**. Allows 802.11n wireless devices to join the network.
- **Up to 150 Mbps**. Allows 802.11n, 802.11g, and 802.11b wireless devices to join the network.

7. To enable SSID broadcast, select the **Enable SSID Broadcast** check box.

   This feature allows the router to broadcast its SSID so wireless stations can see this wireless name (SSID) in their scanned network lists. This check box is selected by default, but you can clear it to disable broadcast of the SSID.

8. To enable wireless isolation, select the **Enable Wireless Isolation** check box.

   This feature allows wireless clients (computers or wireless devices) that join the network to use the Internet, but they cannot access each other or access Ethernet devices on the network.

9. Specify the security option.

   You can change the wireless authentication and encryption option and the passphrase (also referred to as the wireless network password or network key). The security that you select encrypts data transmissions and ensures that only trusted devices receive authorization to connect to your network.

   For more information about changing the wireless security options and password, see *Security Options* on page 31.

> **Note:** The WEP option displays only if you select Up to 54 Mbps from the Mode list.

⚠️ **WARNING:**

NETGEAR recommends that you do not change the wireless security option or the password. Do not diable the wireless security!

10. Click the **Apply** button.
11. Set up and test your wireless devices and computers to make sure that they can connect wirelessly. If they do not, check the following:
    - Is your wireless device or computer connected to your network or another wireless network in your area? Some wireless devices automatically connect to the first open network (without wireless security) that they discover.
    - Does your wireless device or computer display on the Attached Devices screen? If it does, then it is connected to the network.
    - If you are not sure what the network name (SSID) or password is, look on the label on your router.

Security Options

You can change the wireless authentication and encryption option and the passphrase (also referred to as the wireless network password or network key). The security that you select encrypts data transmissions and ensures that only trusted devices receive authorization to connect to your network.

> **WARNING:**
>
> **NETGEAR recommends that you do not change the wireless security option or the passphrase. However, if you need to change these settings, the following sections explains how. Do not disable wireless security!**

WPA-PSK and WPA-PSK + WPA2-PSK Mixed Mode

These types of wireless security options use a pre-shared key (PSK), which is the same as a passphrase, wireless network password, or network key.

You can select from the following wireless PSK security options:

- **WPA2-PSK [AES]**. Wi-Fi Protected Access version 2 (WPA2) data encryption provides strong data security with Advanced Encryption Standard (AES) encryption. This is the preset wireless security that is enabled by default. WPA2 provides the most reliable security. This option supports speeds of up to 300 Mbps. If not all clients in your network support WPA2, select WPA-PSK + WPA2-PSK mixed mode.

- **WPA-PSK [TKIP] + WPA2-PSK [AES]**. WPA-PSK + WPA2-PSK is referred to as mixed mode, which supports a combination of TKIP and AES encryption for both WPA and WPA2 clients. For WPA clients, this option supports speeds of up to 54 Mbps only. For WPA2 clients, this option supports speeds of up to 300 Mbps.

➤ **To change the WPA2 wireless security option and wireless network passphrase:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Wireless**.

3. In the Security Options sections of the Wireless Settings screen, select one of the WPA options with PSK.

   Security Options
   - ○ None
   - ○ WPA2-PSK [AES]
   - ● WPA-PSK [TKIP] + WPA2-PSK [AES]

   Security Options (WPA-PSK + WPA2-PSK)
   Passphrase: smilingnest773   (8-63 characters or 64 hex digits)

4. In the associated **Passphrase** field, enter the passphrase that you want to use.

The passphrase is a text string from 8 to 63 ASCII characters or exactly 64 hexadecimal digits. A hexadecimal digit is one of the following characters: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A–F, and a–f.

Wireless clients must use the passphrase to access the wireless network through the router.

5. Click the **Apply** button.

   Your changes are saved.

WEP

Wired Equivalent Privacy (WEP) security is an authentication and data encryption mode that is superseded by WPA-PSK and WPA2-PSK. WEP supports speeds of up to 54 Mbps and does not function with WPS. However, if you set up a wireless distribution system (see *Wireless Distribution System* on page 62), WEP is the only security that can be supported.

Note: The WEP option displays only if you select Up to 54 Mbps from the Mode list.

➢ **To configure the WEP security and wireless passphrase:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Wireless**.

   The Wireless Network screen displays.

3. Select **Up to 54 Mbps** from the Mode list.

4. In the Security Options sections of the Wireless Settings screen, select the **WEP** radio button.

5. In the Authentication Type list, select one of the following types:
   • **Automatic**. If you enter a passphrase in the Passphrase field and click the Generate button, the four keys are automatically generated.
   • **Shared Key**. If you select this option, you must select one key and enter the value manually.

6. In the Encryption Strength list, select the encryption key size:
   • **64-bit**. Standard WEP encryption, using 40/64-bit encryption.
   • **128-bit**. Standard WEP encryption, using 104/128-bit encryption. This selection provides higher encryption security.

7. Depending on the authentication type, generate the key automatically or enter it manually:
   • If the authentication type is Automatic:
   a. In the Passphrase field, enter a passphrase:
   b. Click the **Generate** button.

   For 64-bit WEP, four different WEP keys are generated. For 128-bit WEP, only one WEP key is generated, and the four key fields are populated with the same WEP key.

   • If the authentication type is Shared Key:
   a. Specify the active key by selecting the **Key 1**, **Key 2**, **Key 3**, or **Key 4** radio button.
   b. Enter the value for the key manually:
   - For 64-bit WEP, enter 10 hexadecimal digits (any combination of 0–9, A–F). The key values are not case-sensitive.

- For 128-bit WEP, enter 26 hexadecimal digits (any combination of 0–9, A–F). The key values are not case-sensitive.

8. Click the **Apply** button.

   Your changes are saved.

Attached Devices

You can view a list of all of the computers and devices that are currently connected to your wired and wireless networks.

Both authorized and unauthorized users (intruders) display. Wired devices are connected to the router through Ethernet cables. Wireless devices have joined the wireless network.

➢ **To view the devices that are connected to your networks:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Attached Devices**.

   A screen similar to the following displays:
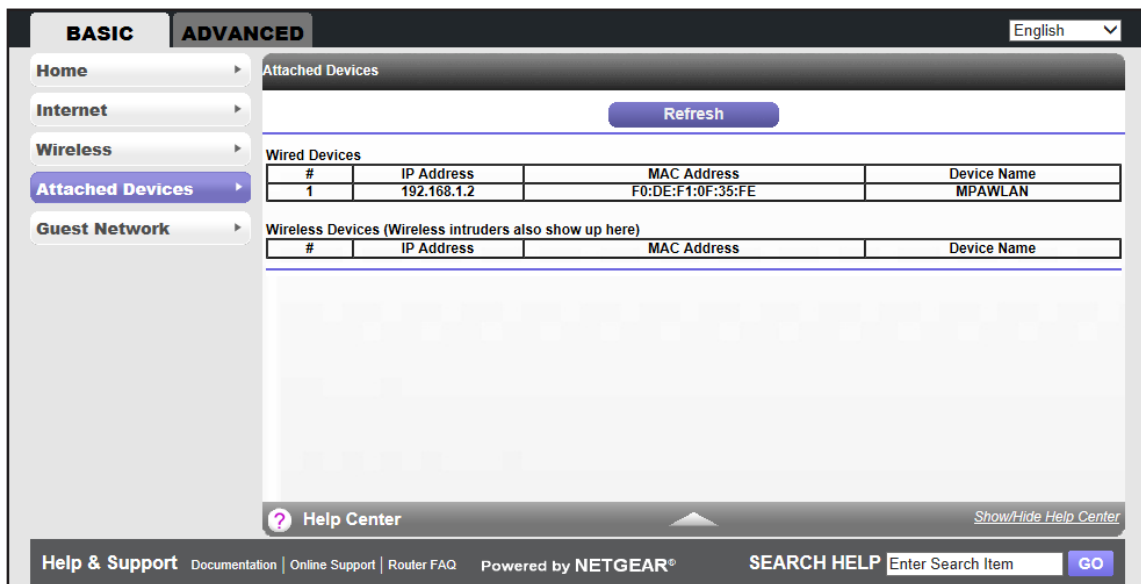
The Wired Devices and Wireless Devices tables show the following information:

- **# (number)**. The order in which the device joined the network.
- **IP Address**. The IP address that the router assigned to this device when it joined the network. This number can change when a device is disconnected and rejoins the network.
- **MAC Address**. The unique MAC address for each device does not change. The MAC address is typically shown on the product label.

- **Device Name**. If the device name is known, it is shown here.

3. To make sure that all of the attached devices are authorized, examine the devices carefully.

4. To refresh the screen, click the **Refresh** button.

   The information that is displayed is updated.

Guest Network

Adding a wireless guest network allows visitors at your home to use the Internet without seeing your passphrase. You can also specify the degree of access that you give to visitors.

You can set up to three different guest networks.

➢ **To set up a guest network:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **BASIC > Guest Network**.

3. The Guest Network Settings screen displays:

4. Select a radio button next to the guest network profile that you want to set up.

5. Enter a name for the guest network in the **Name (SSID)** field.

   The guest network name is case-sensitive and can be up to 32 characters. The default guest SSID is NETGEAR_Guest. This SSID is *in addition* to the regular SSID that you set up on the Wireless Settings screen (see *Basic Wireless Settings* on page 28).

6. Select or clear any of the following optional check boxes:

- **Enable Guest Network**. If this check box is selected, the guest network is enabled, and guests can connect to your network using the SSID of this profile. By default, this check box is cleared.

- **Enable SSID Broadcast**. If this check box is selected, the router broadcasts its SSID to all wireless devices. This check box is selected by default.

- **Allow guest to access My Local Network**. If this check box is selected, any user who connects to this SSID has access to your local network, not just Internet access. This check box is selected by default.

- **Enable Wireless Isolation**. If this check box is selected, wireless devices that join the network can use the Internet, but cannot access each other or access Ethernet devices on the network. By default, this check box is cleared.

7. Select a security option for the guest network.

   The security options that are available for the wireless guest network are the same options that are available for the regular wireless network. For more information, see *Security Options* on page 31).

   By default, the wireless guest network has no security (no authentication or encryption). However, NETGEAR recommends that you do select a security option.

8. Click the **Apply** button.

   Your changes are saved.

genie ADVANCED Home

4

Specify custom settings

This chapter describes the features that are available from the genie ADVANCED Home screen.

This chapter contains the following sections:

- *Setup Wizard*
- *WPS Wizard*
- *WAN Setup*
- *LAN Setup*

The following menu selections that you can access from the ADVANCED Home screen are described in separate chapters:

- **Administration**. For information, see *Chapter 5, Administration*.
- **Advanced Setup**. For information, see *Chapter 6, Advanced Settings*.

Setup Wizard

The NETGEAR genie installation process launches with the Setup Wizard the first time that you start the router. After you have set up the router, the genie installation process no longer launches automatically, but you can launch the Setup Wizard manually.

➢ **To launch the Setup Wizard:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup Wizard**.

   The following screen displays:
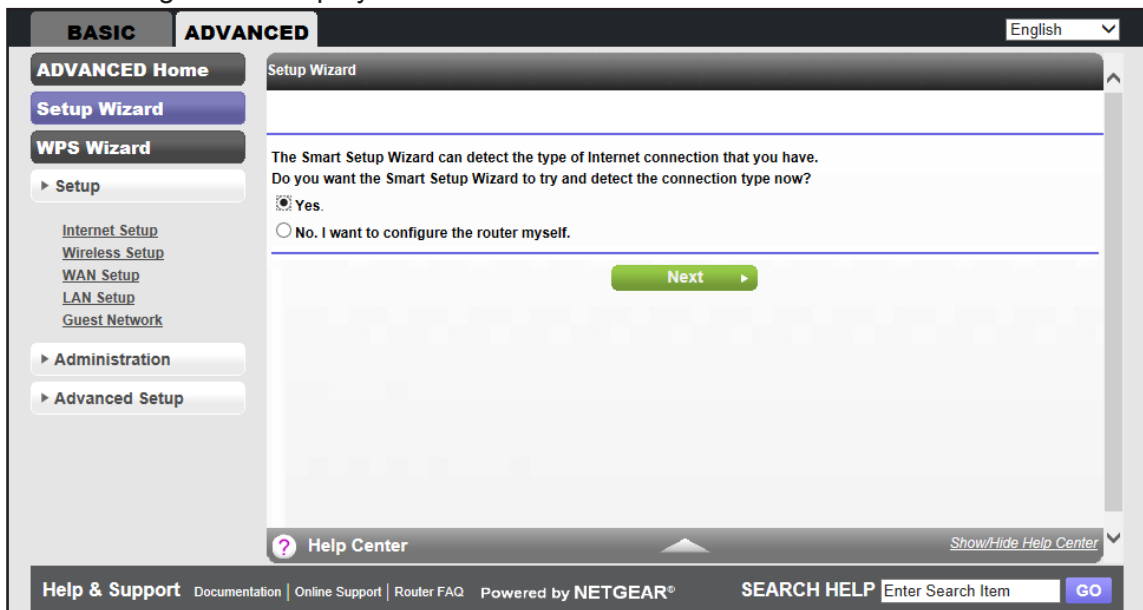
3. Select the **Yes** radio button and click the **Next** button.

The next screen displays:
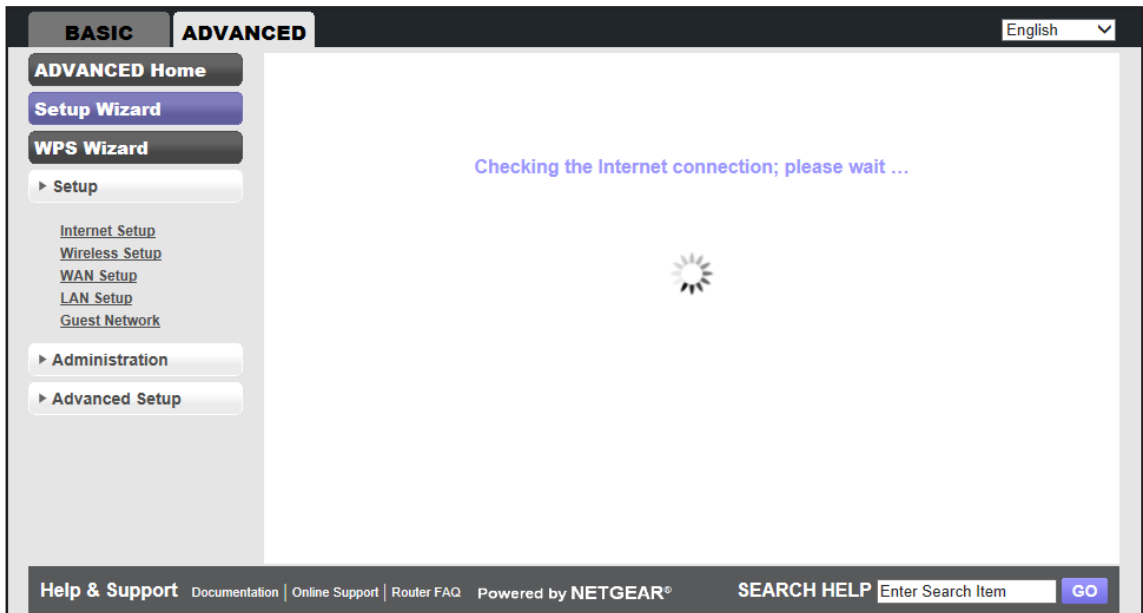
Note: If you select the **No, I want to configure the router myself** radio button, the Internet Setup screen displays. For information about the Internet Setup screen, see *Internet Setup* on page 25.

The Setup Wizard searches your Internet connection for servers and protocols to determine your ISP configuration. When the Setup Wizard is successful, the following screen displays:
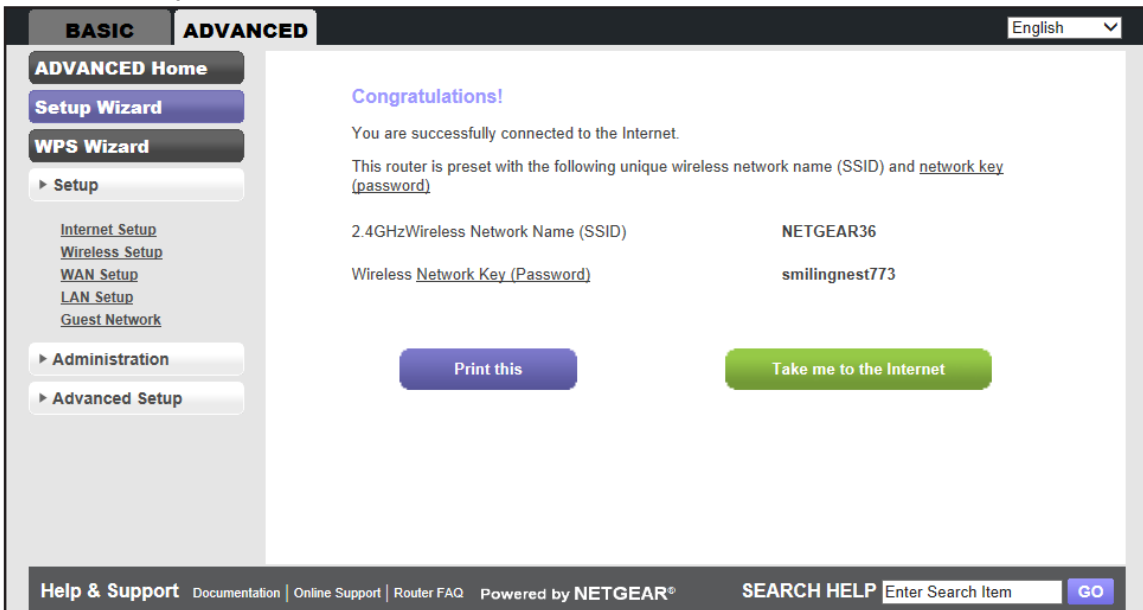
WPS Wizard

The WPS Wizard helps you add a WPS-capable client (a computer or other wireless device) to your network. On the client, you must either press its WPS button or locate its WPS PIN.

➢ **To use the WPS Wizard:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > WPS Wizard**.

   The following screen displays:
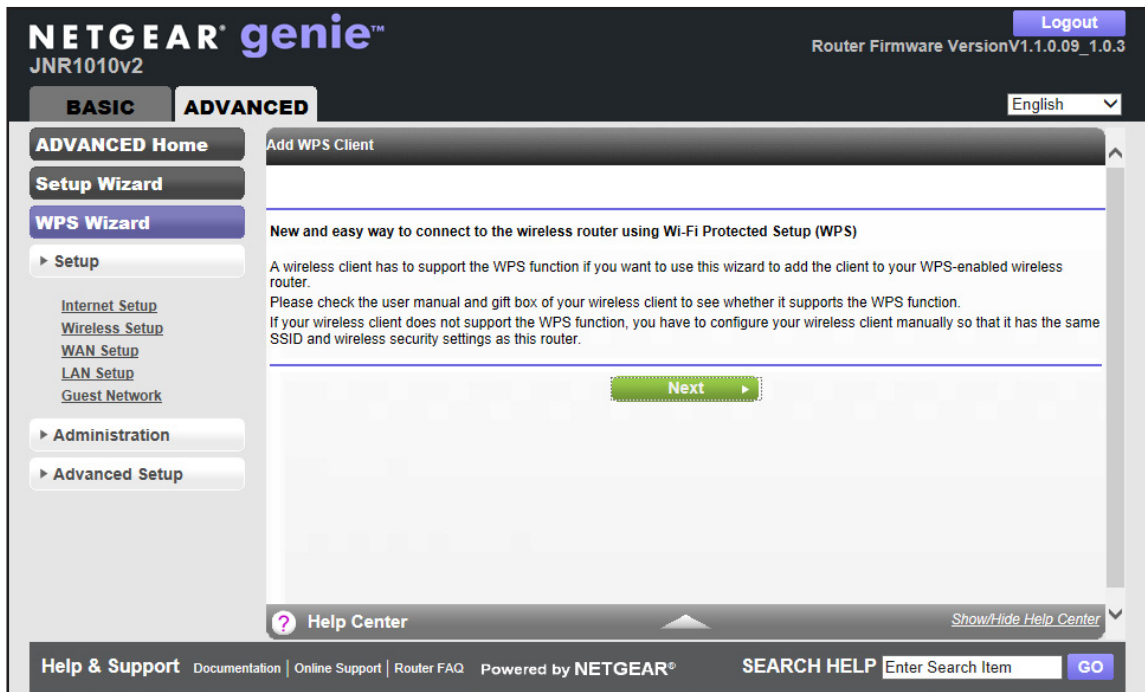
3. Click the **Next** button.

The screen that displays lets you select the method for adding the client:
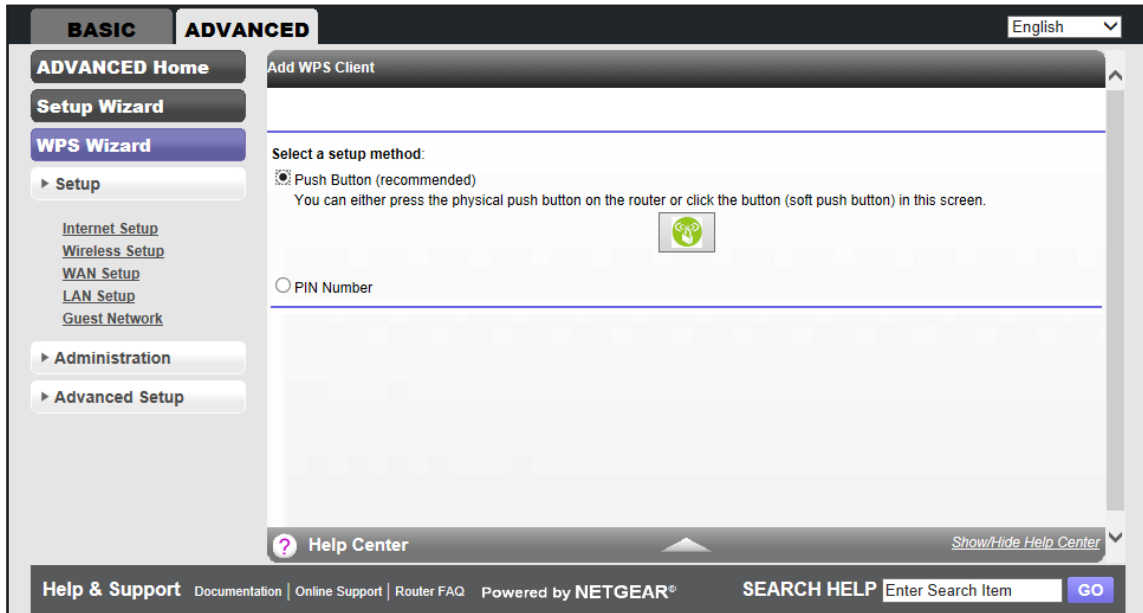
4. Select one of the following radio buttons:

- **Push Button**. To use the push-button method, do the following:

  a. Either click the **WPS** radio button on this screen, or press the **WPS** button that is on the front panel of the router (see *Front Panel* on page 8).

  b. Within two minutes, go to the client and press its **WPS** button to let the client join the network.

    You do not need to enter a password.

- **PIN Number**. To use the PIN method, do the following:

  a. Select the **PIN Number** radio button.

    The screen adjusts:
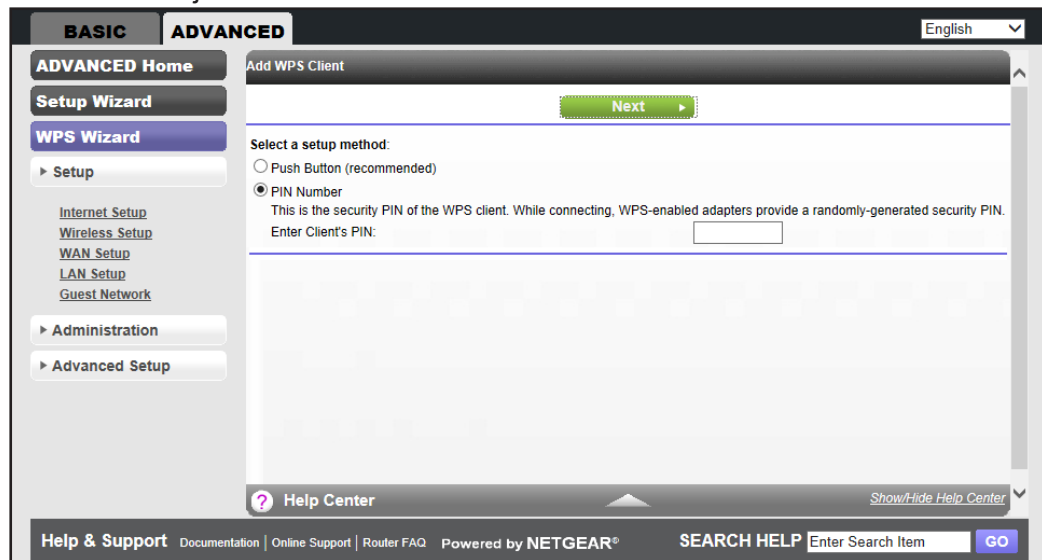
b. Enter the client security PIN.

c. Click the **Next** button.

Within two minutes, go to the client and use its WPS software to let the client join the network.

You do not need to enter a password.

While the router attempts to add the WPS-capable client, the WPS LED on the front of the router blinks green. When the router establishes a WPS connection, the LED is solid green, and the router WPS screen displays a confirmation message.

d. To add another WPS client to your network, repeat this procedure.

WAN Setup

You can configure a DMZ (demilitarized zone) server, change the maximum transmit unit (MTU) size, and enable the router to respond to a ping on the WAN (Internet) port. The router does not support a VPN endpoint, but it allows traffic from VPN endpoints to pass through.

➢ **To change the WAN settings:**

1. Log in to the router.

For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > WAN Setup**.

The following screen displays:

3. Enter the settings that you want to customize.

- **Disable Port Scan and DoS Protection**. DoS protection protects your LAN against denial of service attacks such as Syn flood, Smurf Attack, Ping of Death, Teardrop Attack, UDP Flood, ARP Attack, Spoofing ICMP, Null Scan, and many others. By default, this check box is cleared.

- **Default DMZ Server**. A demilitarized zone (DMZ) server can be helpful when you play online games and use videoconferencing. Be careful when you use this feature because it makes the firewall security less effective. For more information, see *Default DMZ Server* on page 44.

- **Respond to Ping on Internet Port**. If you want the router to respond to a ping from the Internet, select this check box. By default, this check box is cleared. Use this feature only as a diagnostic tool because it allows your router to be discovered. Do not select this check box unless you have a specific reason.

- **MTU Size (in bytes)**. The normal MTU (maximum transmit unit) value for most Ethernet networks is 1500 bytes, or 1492 bytes for PPPoE connections. For some ISPs, you might need to reduce the MTU. This change is rarely required. Do not make this change unless you are sure that it is necessary for your ISP connection. For more information, see *Change the MTU Size* on page 45.

- **NAT Filtering**. Network Address Translation (NAT) determines how the router processes inbound traffic:

- Secured NAT provides a secured firewall to protect the computers on the LAN from attacks from the Internet, but might prevent some Internet games, point-to-point applications, or multimedia applications from functioning. By default, the **Secured** radio button is selected.

- Open NAT provides a much less secured firewall, but allows almost all Internet applications to function.

• **Disable SIP ALG**. Some Voice over IP (VoIP) applications do not function well with the Session Initiation Protocol (SIP) Application Layer Gateway (ALG). Selecting the check box to turn off the SIP ALG might enable connected VoIP devices to create and accept a VoIP call through the router. By default, this check box is cleared.

• **Disable IGMP Proxying**. IGMP proxying allows computers on the LAN to receive the multicast traffic they are subscribed to from the Internet. By default, this check box is selected, and the IGMP proxy is disabled, preventing multicast traffic from the Internet to the LAN. Clear the **Disable IGMP Proxying** check box to allow multicast traffic from the Internet to the LAN.

• **VPN Passthrough**. The router supports VPN passthrough for IPSec, PPTP, and L2TP.

   - **IPSec Passthrough**. To enable or disable IPSec passthrough, select the **Enable** or **Disabled** radio button.

   - **PPTP Passthrough**. To enable or disable PPTP passthrough, select the **Enable** or **Disabled** radio button.

   - **L2TP Passthrough**. To enable or disable L2TP passthrough, select the **Enable** or **Disabled** radio button.

4. Click the **Apply** button.

    Your changes are saved.

Default DMZ Server

The default DMZ server feature is helpful when you use some online games and videoconferencing applications that are incompatible with Network Address Translation (NAT). The router is programmed to recognize some of these applications and to function correctly with them, but other applications exist that might not function well. In some cases, one local computer can run the application correctly if that computer's IP address is entered as the default DMZ server.

> **WARNING:**
>
> **DMZ servers pose a security risk. A computer designated as the default DMZ server loses much of the protection of the firewall and is exposed to exploits from the Internet. If compromised, the DMZ server computer can be used to attack other computers on your network.**

➢ **To set up a default DMZ server:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > WAN Setup**.

   The WAN Setup screen displays.

3. Select the **Default DMZ Server** check box.

4. Type the IP address.

5. Click the **Apply** button.

   Your changes are saved.

Change the MTU Size

The maximum transmission unit (MTU) is the largest data packet a network device transmits. When one network device communicates across the Internet with another, the data packets travel through many devices along the way. If any device in the data path has a lower MTU setting than the other devices, the data packets must be split or fragmented to accommodate the device with the smallest MTU.

The best MTU setting for NETGEAR equipment is often just the default value, and changing the value might fix one problem but cause another.

⚠️ **WARNING:**

An incorrect MTU setting can cause Internet communication problems such as the inability to access certain websites, frames within websites, secure login pages, or FTP or POP servers.

Leave the MTU unchanged unless one of these situations occurs:

- You have problems connecting to your ISP or other Internet service, and technical support of either the ISP or NETGEAR recommends changing the MTU setting. These web-based applications might require an MTU change:
  - A secure website that does not open, or displays only part of a web page
  - Yahoo email
  - MSN portal
  - America Online's DSL service
- You use VPN and have severe performance problems.
- You used a program to optimize MTU for performance reasons, and now you have connectivity or performance problems.

If you suspect an MTU problem, a common solution is to change the MTU to 1400. If you are willing to experiment, you can gradually reduce the MTU from the maximum value of 1500 until the problem goes away.

The following table describes common MTU sizes and applications.

Table 3. Common MTU sizes

MTU	Application
1500	The largest Ethernet packet size. This value is the typical setting for non-PPPoE, non-VPN connections, and is the default value for NETGEAR routers, adapters, and switches.
1492	Used in PPPoE environments.
1472	Maximum size to use for pinging. (Larger packets are fragmented.)
1468	Used in some DHCP environments.
1460	Usable by AOL if you do not have large email attachments, for example.
1436	Used in PPTP environments or with VPN.
1400	Maximum size for AOL DSL.
576	Typical value to connect to dial-up ISPs.

➢ **To change the MTU size:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > WAN Setup**.

   The WAN Setup screen displays.

3. In the **MTU Size** field, enter a new size from 64 through 1500.

4. Click the **Apply** button.

   Your changes are saved.

LAN Setup

You can configure LAN IP services such as Dynamic Host Configuration Protocol (DHCP) and Routing Information Protocol (RIP).

The router is shipped preconfigured to use private IP addresses on the LAN side and to function as a DHCP server. The router's default LAN IP configuration includes the following settings:

- **LAN IP address**. 192.168.1.1
- **Subnet mask**. 255.255.255.0

These addresses are part of the designated private address range for use in private networks and are suitable for most applications. If your network requires the use of a different IP addressing scheme, change the settings in the LAN Setup screen.

Note: If you change the LAN IP address of the router while connected through the browser, you are disconnected. If this situation occurs, you must open a new connection to the new IP address and log in again.

➢ **To change the LAN settings:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > LAN Setup**.

   The following screen displays:

3. Enter the following settings:

   • **IP Address**. The LAN IP address of the router (by default, 192.168.1.1).

   • **IP Subnet Mask**. The LAN subnet mask of the router (by default, 255.255.255.0). Combined with the IP address, the IP subnet mask allows a device to know which other addresses are local to it, and which must be reached through a gateway or router.

   • **RIP Direction**. Router Information Protocol (RIP) enables a router to exchange routing information with other routers. This setting controls how the router sends and

receives RIP packets. **Both** is the default setting. With the **Both** or **Out Only** setting, the router broadcasts its routing table periodically. With the **Both** or **In Only** setting, the router incorporates the RIP information that it receives.

- **RIP Version**. This setting controls the format and the broadcasting method of the RIP packets that the router sends. It recognizes both formats when receiving. By default, the RIP function is disabled. Three RIP versions exist:
    - RIP-1 is universally supported. It is adequate for most networks, unless you have an unusual network setup.
    - RIP-2B uses subnet broadcasting.
    - RIP-2M uses multicasting.

4. To set your computers' IP addresses manually, clear the Use Router as DHCP Server check box.

   NETGEAR recommends that you do not do this. For more information, see *Use Router as DHCP Server* on page 48.

5. To reserve an IP address for a computer or device on the LAN, in the Address Reservation section, click the **Add** button.

   For more information, see *Set Up Address Reservation* on page 49.

6. Click the **Apply** button.

   Your changes are saved.

Use Router as DHCP Server

By default, the router functions as a DHCP server, enabling it to assign IP, DNS server, and default gateway addresses to all computers and devices that are connected to the router's LAN. The assigned default gateway address is the LAN address of the router. The router assigns IP addresses to the attached computers and devices from a pool of addresses specified on the LAN Setup screen. Each pool address is tested before it is assigned to avoid duplicate addresses on the LAN. For most applications, the default DHCP and TCP/IP settings of the router function well.

You can specify the pool of IP addresses that are assigned by setting the starting IP address and ending IP address. These addresses should be part of the same IP address subnet as the router's LAN IP address. Using the default addressing scheme, the default range is 192.168.1.2–192.168.1.254, although you might want to save part of this range for devices with fixed addresses.

- **Starting IP Address**. Specify the start of the range for the pool of IP addresses in the same subnet as the router. The IP address 192.168.1.2 is the default starting address.

- **Ending IP Address**. Specify the end of the range for the pool of IP addresses in the same subnet as the router. The default ending IP address is 192.168.1.254.

The router delivers the following parameters to any LAN device that requests DHCP information:

- An IP address from the range that you have defined

- Subnet mask
- Gateway IP address (the router's LAN IP address)
- DNS server IP address (the router's LAN IP address)

You can use another device on your network as the DHCP server or you can manually configure the network settings of all of your computers and devices.

➢ **To disable the DHCP server feature:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup screen displays.

3. Clear the **Use Router as DHCP Server** check box.

4. Click the **Apply** button.

If the DHCP service is not enabled on the router and no other DHCP server is available on your network, you must set your computers' IP addresses manually or your computers are not able to access the router.

Set Up Address Reservation

When you specify a reserved IP address for a computer or device on the LAN, that computer or device always receives the same IP address each time it accesses the router's DHCP server. Reserved IP addresses should be assigned to computers or servers that require permanent IP settings.

➢ **To reserve an IP address:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > LAN Setup**.

   The LAN Setup screen displays.

3. In the Address Reservation section of the screen, click the **Add** button.

The following screen displays:
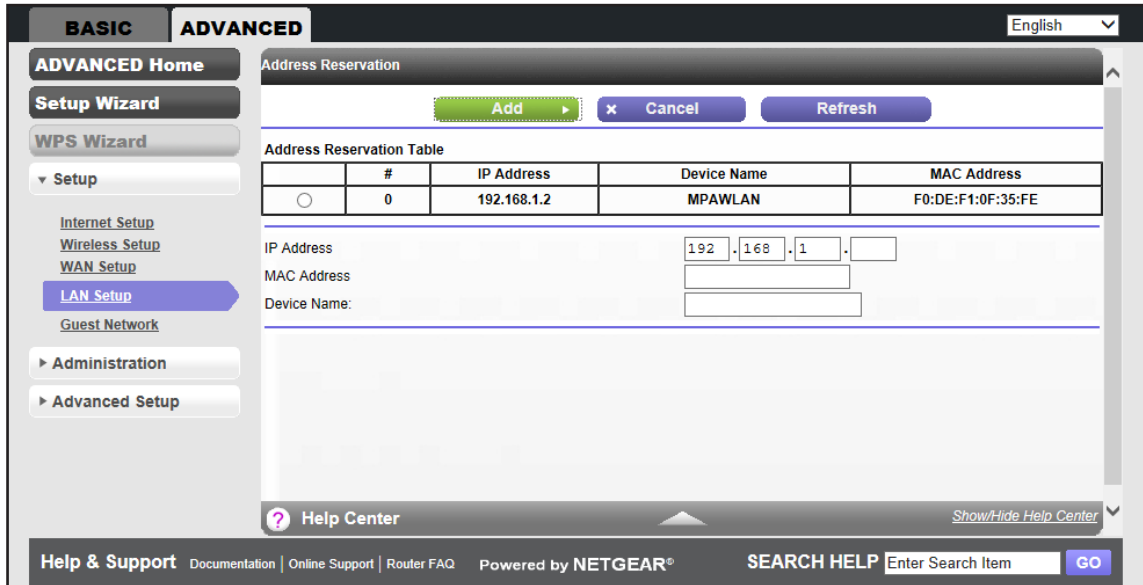
4. In the **IP Address** field, type the IP address to assign to the computer or server. (Choose an IP address from the router's LAN subnet, such as 192.168.1.x.)

> **Tip:** If the computer is already on your network, you can select the associated radio button in the Address Reservation Table. The computer's information is automatically copied into the **IP Address**, **MAC Address**, and **Device Name** fields.

5. In the **MAC Address** field, type the MAC address of the computer or server.

6. In the **Device Name** field, type a name for the computer or server.

7. Click the **Add** button.

    The address is added to the Address Reservation Table on the LAN Setup screen.

    The reserved address is not assigned until the next time the computer contacts the router's DHCP server. Reboot the computer or access its IP configuration and force a DHCP release and renew.

➢ **To edit or delete a reserved address entry:**

1. Log in to the router.

    For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Setup > LAN Setup**.

    The LAN Setup screen displays.

3. In the Address Reservation Table, select the radio button next to the address that you want to edit or delete, and do one of the following:

    • To delete a reserved address entry, click the **Delete** button.

        The address is removed from the table.

- To edit a reserved address entry, click the **Edit** button.

  The Address Reservation screen displays.

  a. Edit the address information.
  b. Click the **Apply** button.

Administration

5

Manage your network

This chapter describes the router settings for administering and maintaining your router and home network. This chapter includes the following sections:

- *Manually Update the Router Firmware*
- *Manage the Configuration File*

For information about changing the password of your router, see *Change the Password* on page 20.

Manually Update the Router Firmware

The router's firmware (software) is stored in flash memory. If the router has detected that new firmware is available, you might see a message at the top of the genie screens. If new firmware is available, you can also use the **Check** button on the Firmware Update screen to check for it manually.

➢ **To check for new firmware and update your router:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Firmware Update**.

   A screen similar to the following displays:
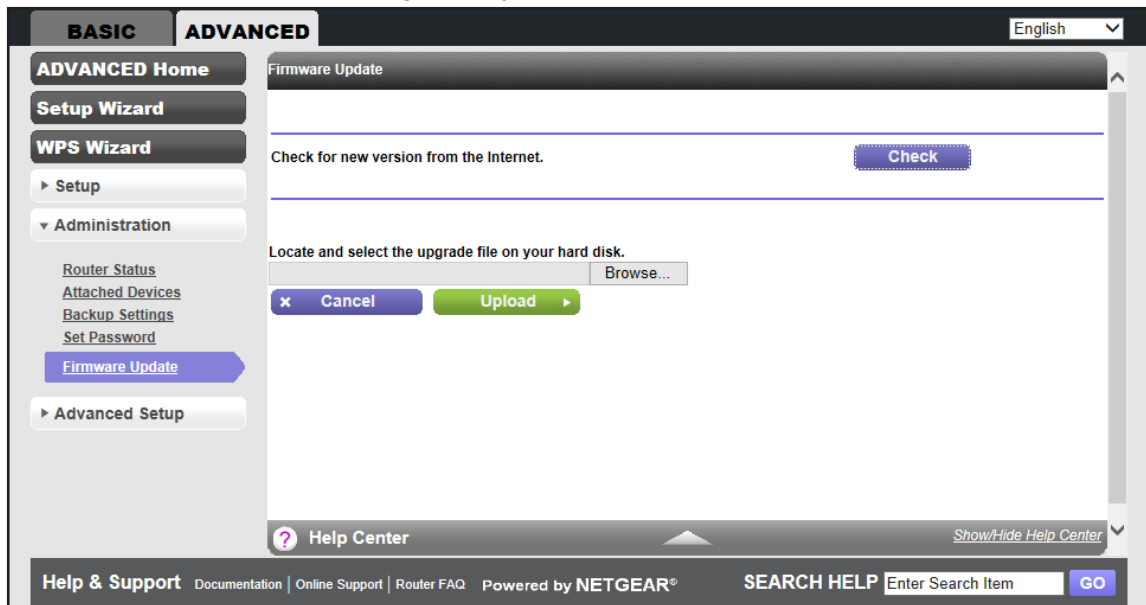
3. Click the **Check** button.

   If new firmware is available, the router detects it and displays the Firmware Update Assistant screen.

4. To update the router to the new firmware, click the **Yes** button.

5. To upload the firmware that you have manually downloaded from the NETGEAR support website, do the following:

   a. Click **Browse**, navigate to the firmware file (the file ends in .img), and select the firmware file.

   b. Click the **Upload** button.

A progress bar shows the progress of the firmware upload process:

Note: It will take about 3 minutes for firmware upgrade.
Please don't turn off the power or press reset button.

Uploading File,
Please wait...
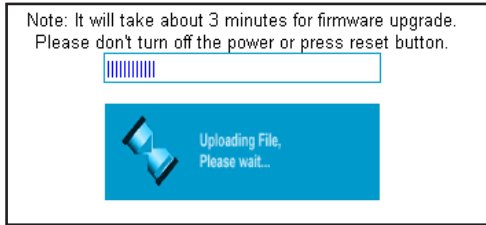
⚠ **WARNING:**

When uploading firmware to the router, *do not* interrupt the web browser by closing the window, clicking a link, or loading a new page. If the browser is interrupted, the firmware might be corrupted.

When the upload is complete, your router restarts. The upload process can take up to three minutes, and the upgrade process typically takes about one minute. To determine whether you need to reconfigure the router after upgrading, read the new firmware release notes.

Manage the Configuration File

The configuration settings of the router are stored within the router in a configuration file. You can back up (save) this file to your computer, restore it, or reset it to the factory default settings.

Back Up Settings

➢ **To back up the router's configuration settings:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Backup Settings**.

The following screen displays:
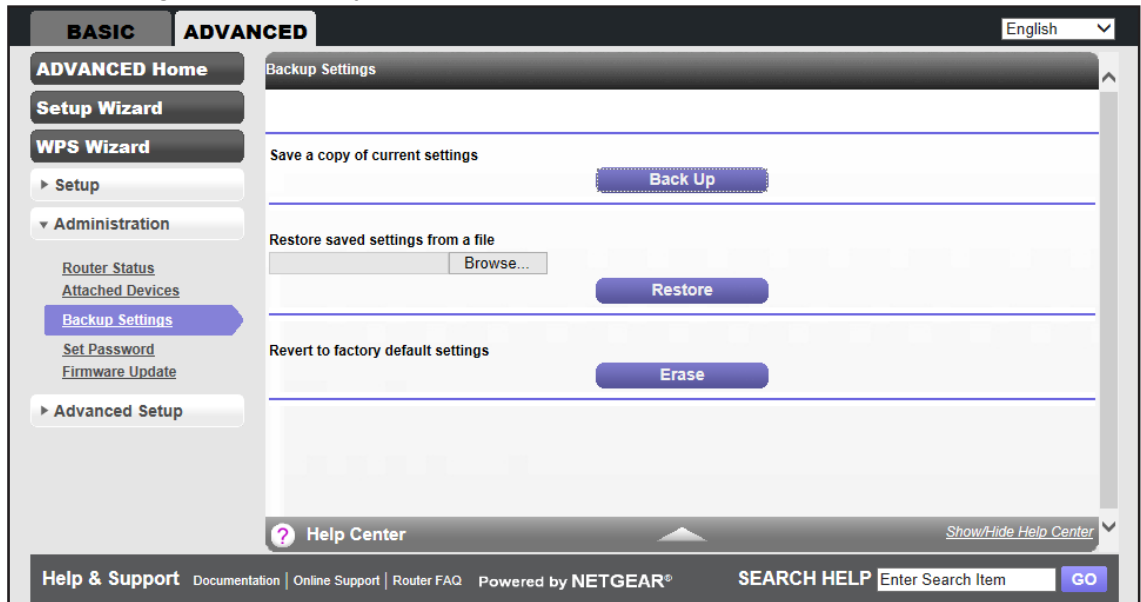
3. To save a copy of the current settings, click the **Back Up** button.

4. Choose a location to store the `.cfg` file on a computer on your network.

5. Click the **OK** button.

   A copy of the current settings is saved.

Restore Configuration Settings

➢ **To restore configuration settings that you backed up:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Backup Settings**.

   The Backup Settings screen displays.

3. To find the `.cfg` file, click the **Browse** button.

4. Select the file and then click the **Restore** button.

   The file is uploaded to the router.

   The router reboots.

   ⚠ **WARNING:**

   Do not interrupt the reboot process.

Erase Configuration Settings

Under some circumstances (for example, if you move the router to a different network), you might want to erase the configuration and restore the factory default settings.

You can either use the Restore Factory Settings button on the back of the router (see *Factory Settings* on page 90), or you can use the **Erase** button on the Backup Settings screen.

➢ **To erase the configuration and restore the factory default settings:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Administration > Backup Settings**.

   The Backup Settings screen displays.

3. Click the **Erase** button.

4. To confirm the action click the **Yes** button.

The router reboots.

⚠ **WARNING:**

Do not interrupt the reboot process.

Erasing sets the user name to admin, the password to password, and the LAN IP address to 192.168.1.1, and enables the router's DHCP server.

Advanced Settings

6

Enhance the performance of your router

This chapter describes the advanced features of your router. The information is for users with a solid understanding of networking concepts. These users want to set the router up for unique situations, such as when remote access from the Internet by IP address or domain name is needed.

This chapter includes the following sections:

- *Advanced Wireless Settings*
- *Wireless Distribution System*
- *Static Routes*
- *Universal Plug and Play*

Advanced Wireless Settings

You can configure advanced settings for your wireless network. You can also set up a schedule to turn off your wireless network, configure the WPS settings, and set up an access list for wireless clients.

Advanced Settings for Your Wireless Network

NETGEAR recommends that you use caution when changing these settings.

➢ **To change advanced settings for your wireless network:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Advanced Wireless Settings**.

   The following screen displays:

3. Select the settings you want to change.

   IMPORTANT:

   The Fragmentation Length, CTS/RTS Threshold, and Preamble Mode options are reserved for wireless testing and advanced configuration only. Do not change these settings.

4. Click the **Apply** button.

   Your changes are saved.

Enable or Disable Wireless Router Radio

➢ **To enable or disable the wireless router radio:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Advanced Wireless Settings**.

   The following screen displays:
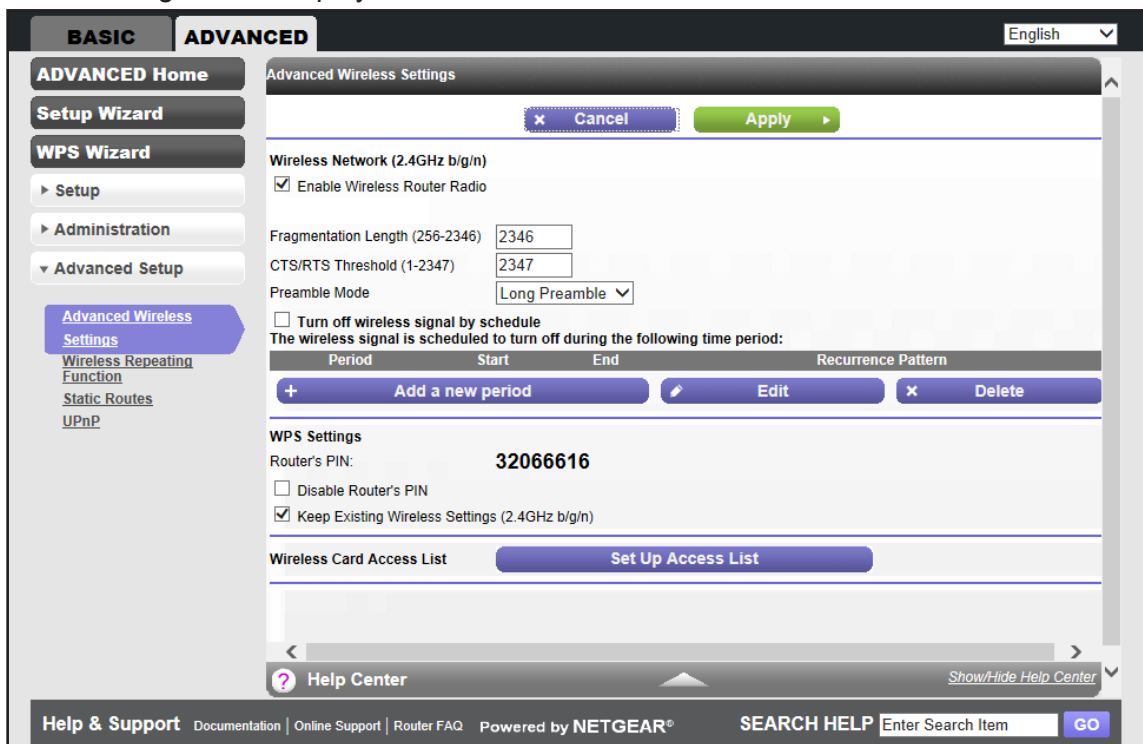
3. Do one of the following:

   • To turn on the wireless radio, select the **Enable Wireless Router Radio** check box.

   • To completely turn off the wireless radio of the router, clear the **Enable Wireless Router Radio** check box.

     When the wireless radio is disabled, you can still use the router by connecting computers to the router with an Ethernet cable. By default, the wireless radio is enabled.

4. Click the **Apply** button.

   Your changes are saved.

Set Up a Wireless Schedule

You can turn off the wireless signal from your router at times when you do not need a wireless connection. For example, you could turn it off for the weekend if you leave town.

➢ **To configure and enable the wireless schedule:**

1. Log in to the router.

    For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Advanced Wireless Settings**.

    The Advanced Wireless Settings screen displays.

3. Click the **Add a new period** button.

    The screen adjusts:

4. Use the lists, radio buttons, and check boxes to set up a period during which you want to turn off the wireless signal.

5. Click the **Apply** button.

    The Advanced Wireless Settings screen displays.

6. To activate the schedule, select the **Turn off wireless signal by schedule** check box.

7. Click the **Apply** button.

    Your changes are saved.

Set Up the WPS Settings

You can control how WPS functions on the router. NETGEAR recommends that you use caution when changing the WPS settings.

> **Note:** For information about how to use WPS to add wireless devices and other equipment to your wireless network, see *Wi-Fi Protected Setup Method* on page 23.

You cannot set up the WPS settings when the security is WEP. Make sure that the security mode is WPA-PSK, WPA2-PSK, or WPA-PSK + WPA2-PSK mixed mode. For information about configuring the security mode, see *Basic Wireless Settings* on page 28.

You can do the following with the router's PIN:

- Disable the PIN entirely.
- Change the number of times that a PIN connection is allowed to fail before the PIN is automatically disabled. By default, the PIN is automatically disabled after three failed connection attempts. If the PIN is automatically disabled, it remains so until you restart the router. While the PIN is disabled, the WPS LED blinks slowly.
- Turn off automatic disabling of the PIN.

➢ **To change the WPS settings for your wireless network:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Advanced Wireless Settings**.

   The Advanced Wireless Settings screen displays.

   The router's PIN is shown for information only. You cannot change it.

3. To disable the router's PIN entirely, select the **Disable Router's PIN** check box.

   By default, the PIN is enabled, but there might be situations in which you want to disable the PIN.

4. Clear the **Keep Existing Wireless Settings (2.4GHz b/g/n)** check box.

   This check box is selected by default. However, when the check box is selected, some applications such as Network Explorer in Windows Vista might not detect the router.

   > **CAUTION:** When you clear this check box and you add a new wireless client through WPS, the router's wireless settings change to an automatically generated SSID and passphrase. (The passphrase is also referred to as the wireless network password or network key.)

5. Click the **Apply** button.

Your changes are saved.

Wireless Distribution System

You can set up the router to be used as a wireless base station or wireless repeater in a wireless distribution system (WDS). A WDS lets you expand a wireless network through multiple access points instead of using a wired backbone to link them. A wireless base station connects to the Internet, can have wired and wireless clients, and sends its wireless signal to an access point that functions as a wireless repeater. A wireless repeater can also have wired and wireless clients, but connects to the Internet through the wireless base station.

The following figure shows a wireless repeating scenario.

Base station access point

Repeater access point
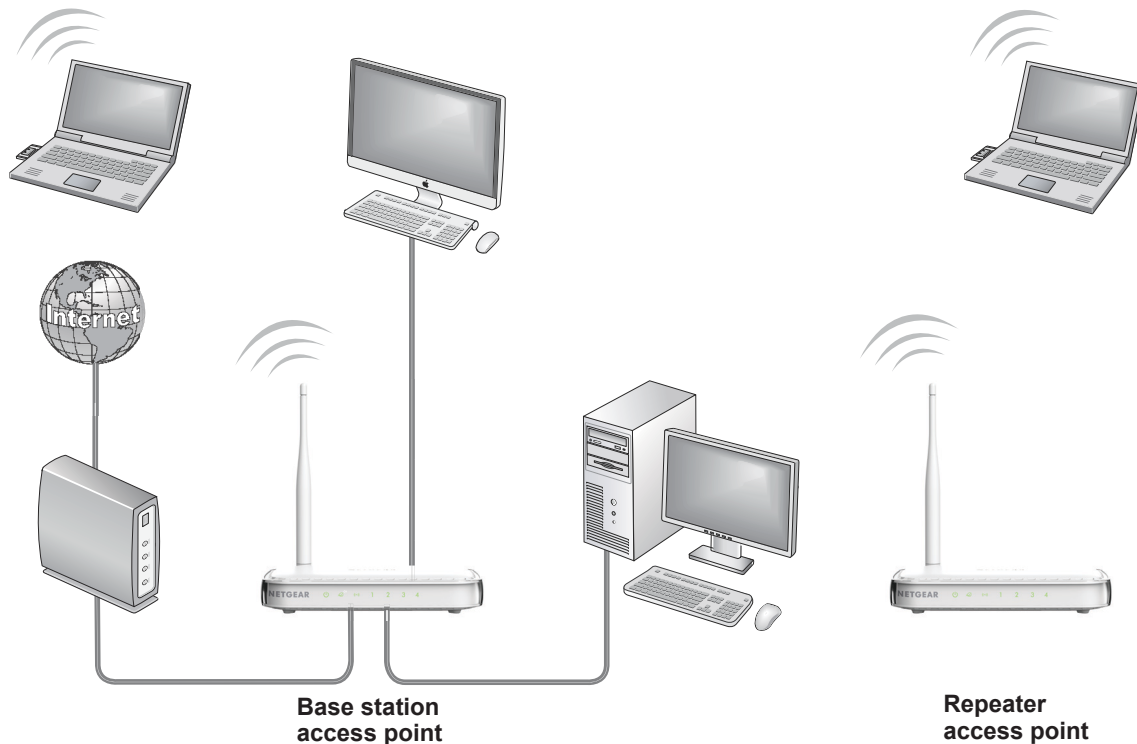
Figure 6. Wireless repeating scenario

The router can function either as a base station or as a repeater:

- **Wireless base station**. The router acts as the parent access point, bridging traffic to and from the child repeater access point, as well as handling wireless and wired local computers. To configure this mode, you must know the MAC address of the child repeater access point.
- **Wireless repeater**. The router sends all traffic from its local wireless or wired computers to a remote access point. To configure this mode, you must know the MAC address of the remote parent access point.

For you to set up a wireless network in a WDS, the following conditions must be met for both access points:

- Both access points must use the same SSID, wireless channel, and encryption mode.

- Both access points must be on the same LAN IP subnet. That is, all the access point LAN IP addresses are in the same network.

- All LAN devices (wired and wireless computers) must be configured to operate in the same LAN network address range as the access points.

- The channel selection on the access points cannot be **Auto** (see *Basic Wireless Settings* on page 28).

- The security option must be WEP (or no security). The **WEP** option displays only if you select **Up to 54 Mbps** from the **Mode** list on the Wireless Settings screen (see *Basic Wireless Settings* on page 28).

Set Up the Base Station

The wireless repeating function works only in hub and spoke mode. The units cannot be daisy-chained. You must know the wireless MAC addresses of all units. First, set up the base station and then set up the repeater.

➢ **To set up the base station:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Wireless Repeating Function**.

   The Wireless Repeating Function screen displays. The wireless MAC address of the router displays onscreen.

3. Select the **Enable Wireless Repeating Function** check box.

4. Select the **Wireless Base Station** radio button.

5. To prevent wireless clients from associating with the base station and allow LAN client associations only, select the **Disable Wireless Client Association** check box.

   You can leave the check box cleared if you prefer wireless clients to be able to associate with the base stations.

6. In the **Repeater MAC Address 1** through **4** fields, enter the MAC addresses for the access points that should function as repeaters.

   If your router is the base station, it can function as the "parent" for up to four other access points.

7. Click the **Apply** button.

   Your changes are saved.

Set Up a Repeater

To set up the repeater to avoid conflicts with the wireless connection to the base station, use a wired Ethernet connection.

Note: If you set up your router as a base station with a non-NETGEAR access point as the repeater, you might need to change more configuration settings. In particular, you should disable the DHCP server function on the access point that functions as the repeater.

➢ **To configure the router as a repeater:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Wireless Repeating Function**.

   The Wireless Repeating Function screen displays. The wireless MAC address of the router displays onscreen.

3. Select the **Enable Wireless Repeating Function** check box.

4. Select the **Wireless Repeater** radio button.

5. Complete the **Repeater IP Address** field.

   This IP address must be in the same subnet as the base station, but different from the LAN IP address of the base station.

6. To prevent wireless clients from associating with the repeater and allow LAN client associations only, select the **Disable Wireless Client Association** check box.

   You can leave the check box cleared if you prefer wireless clients to be able to associate with the repeater.

7. In the **Base Station MAC Address** field, enter the MAC addresses for the access point that will function as the base station.

8. Click the **Apply** button.

   Your changes are saved.

9. Verify connectivity across the LANs.

   A computer on any wireless or wired LAN segment of the base station or a repeater can connect to the Internet. Any computer that is connected to the base station can share

files and printers with any other wireless or wired computer or server that is connected to a repeater.

Static Routes

Static routes provide more routing information to your router. Under usual circumstances, the router has adequate routing information after it has been configured for Internet access, and you do not need to configure more static routes. You must configure static routes only for unusual cases such as multiple routers or multiple IP subnets on your network.

As an example of when a static route is needed, consider the following case:

- Your primary Internet access is through a cable modem to an ISP.
- You have an ISDN router on your home network for connecting to the company where you are employed. This router's address on your LAN is 192.168.1.100.
- Your company's network address is 134.177.0.0.

When you first configured your router, two implicit static routes were created. A default route was created with your ISP as the gateway, and a second static route was created to your local network for all 192.168.1.x addresses. With this configuration, if you attempt to access a device on the 134.177.0.0 network, your router forwards your request to the ISP. The ISP forwards your request to the company where you are employed, and the company's firewall denies the request.

In this case you must define a static route, telling your router that 134.177.0.0 should be accessed through the ISDN router at 192.168.1.100. This example assume the following settings:

- The **Destination IP Address** and **IP Subnet Mask** fields specify that this static route applies to all 134.177.x.x addresses.
- The **Gateway IP Address** field specifies that all traffic for these addresses should be forwarded to the ISDN router at 192.168.1.100.
- A metric value of **1** works because the ISDN router is on the LAN.
- **Private** is selected only as a precautionary security measure in case RIP is activated.

➢ **To set up a static route:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Static Routes**.

The following screen displays:
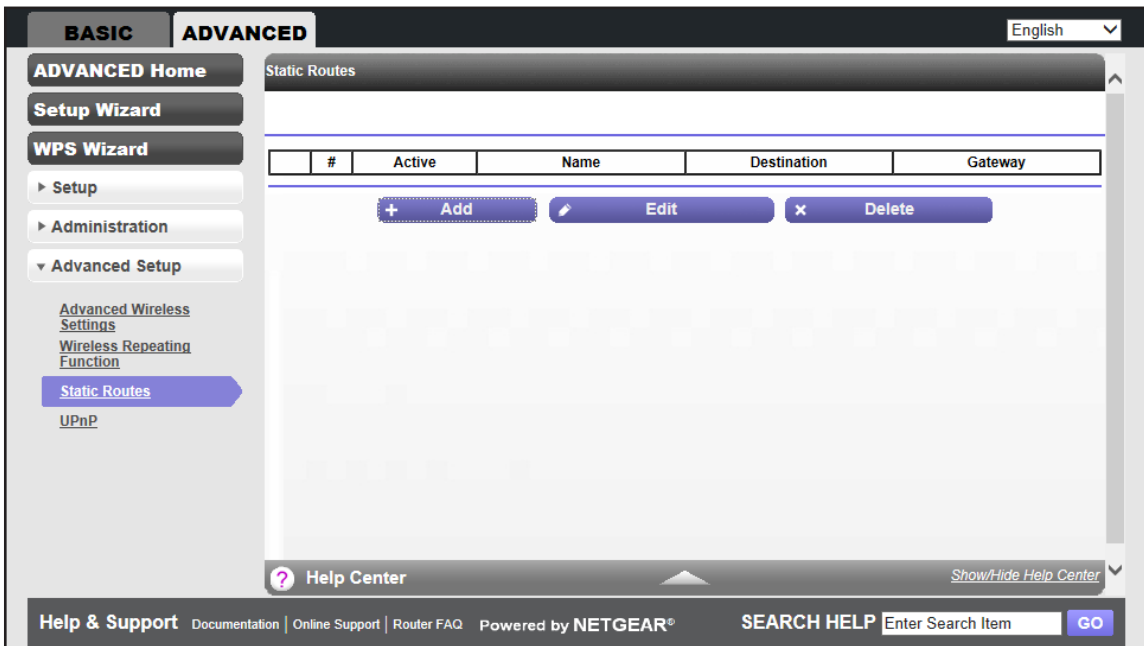
3. Click the **Add** button.

The screen adjusts:
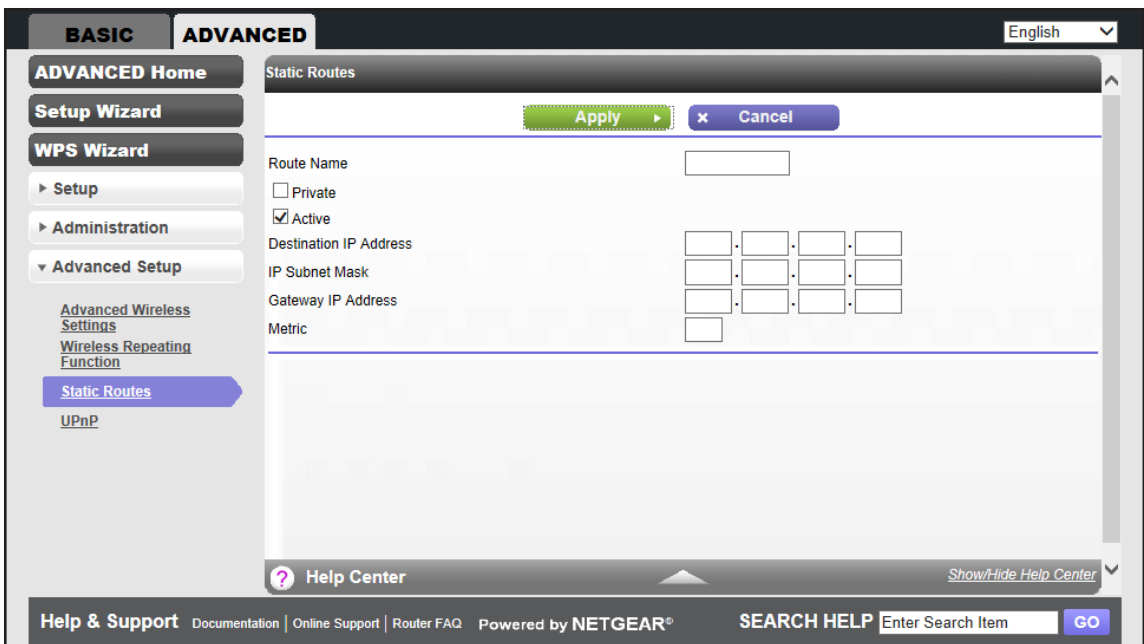
4. In the **Route Name** field, type a name for this static route (for identification purposes only).

5. If you want to limit access to the LAN only, select the **Private** check box.

If you select **Private**, the static route is not reported in RIP.

6. To make this route effective, select the **Active** check box.

By default, the **Active** check box is selected.

7. Type the IP address of the final destination.

8. Type the IP subnet mask for this destination. If the destination is a single host, type **255.255.255.255**.

9. Type the gateway IP address, which must be a router on the same LAN segment as the JNR1010v2 N150 Wireless Router.

10. Type a number from 1 through 15 as the metric value.

   This value represents the number of routers between your network and the destination. Usually, a setting of 2 or 3 works, but if this link is a direct connection, set it to **1**.

11. Click the **Apply** button.

   The route is added to the table on the Static Routes screen.

➢ **To edit or delete a static route:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > Static Routes**.

   The Static Routes screen displays.

3. In the table, select the radio button next to the route that you want to edit or delete.

4. To edit the route, click the **Edit** button.

   The Static Routes screen adjusts.

   a. Edit the route information.

   b. Click the **Apply** button.

5. To delete the route, click the **Delete** button.

   The route is removed from the table.

Universal Plug and Play

Universal Plug and Play (UPnP) helps devices, such as Internet appliances and computers, to access the network and connect to other devices as needed. UPnP devices can automatically discover the services from other registered UPnP devices on the network.

Note: If you use applications such as multiplayer gaming, peer-to-peer connections, or real-time communications such as instant messaging or remote assistance, enable UPnP.


➢ **To configure Universal Plug and Play:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Select **ADVANCED > Advanced Setup > UPnP**.

   A screen similar to the following displays:

3. Select the **Turn UPnP On** check box.

   This check box is selected by default. You can enable or disable UPnP for automatic device configuration. If the **Turn UPnP** On check box is cleared, the router does not allow any device to automatically control the resources, such as port forwarding (mapping), of the router.

4. In the **Advertisement Period (in minutes)** field, type the advertisement period in minutes.

   The advertisement period specifies how often the router broadcasts its UPnP information. This value can range from 1 to 1440 minutes. The default period is 30 minutes. Shorter durations ensure that control points have current device status at the expense of more network traffic. Longer durations can compromise the freshness of the device status, but can significantly reduce network traffic.

5. In the **Advertisement Time to Live (in hops)** filed type the advertisement time to live in hops.

   The time to live for the advertisement is measured in hops (steps) for each UPnP packet sent. Hops are the steps a packet takes between routers. The number of hops can range from 1 to 255. The default value for the advertisement time to live is 4 hops, which should be fine for most home networks. If you notice that some devices are not being updated or reached correctly, it might be necessary to increase this value.

6. Click the **Apply** button.

The UPnP Portmap Table displays the IP address of each UPnP device that is accessing the router and which ports (internal and external) that device has opened. The UPnP Portmap Table also displays what type of port is open and whether that port is still active for each IP address.

7. To refresh the information in the UPnP Portmap Table, click the **Refresh** button.

Monitoring 7

Monitor your router and network traffic

This chapter describes how to monitor your router and network traffic. This chapter includes the following sections:

- *Router Status and Usage Information Screen*
- *Router Information Pane*
- *Internet Port Pane*
- *Wireless Settings Pane*
- *Guest Network Pane*

For information about upgrading or checking the status of your router over the Internet, see *Universal Plug and Play* on page 68.

Router Status and Usage Information Screen

➢ **To view router status and usage information:**

Click the **ADVANCED** tab.

The screen that displays shows information about the router, the Internet port, the wireless settings, and the guest network (this screen is referred to as the Router Status screen):

Note: The Router Status screen also displays when you select
ADVANCED > Advanced Home or
ADVANCED > Administration > Router Status.

Router Information Pane

➢ **To display the Router Information pane:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

   The Router Status screen displays. The Router Information pane is located in the upper left of the screen.

   The following information displays:

   • **Hardware Version**. The router model.

   • **Firmware Version**. The version of the router firmware. It changes if you upgrade the router firmware.

   • **GUI Language Version**. The localized language of the router user interface.

   • **LAN Port**:

     - **MAC Address**. The Media Access Control address for the Ethernet (LAN) port. This address is the unique physical address that the Ethernet (LAN) port of the router uses.

     - **IP Address**. The IP address that the Ethernet (LAN) port of the router uses. The default is 192.168.1.1.

     - **DHCP Server**. Identifies whether the router's built-in DHCP server is active for the LAN-attached devices.

Internet Port Pane

➢ **To display the Internet Port pane:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

   The Router Status screen displays. The Internet Port pane is located in the upper right of the screen.

   The following information displays:

   • **MAC Address**. The Media Access Control (MAC) address for the Internet port. This address is the unique physical address that the Internet (WAN) port of the router uses.

   • **IP Address**. The IP address that the Internet (WAN) port of the router uses. If no address is shown or the address is 0.0.0.0, the router is not connected to the Internet.

- **Connection**. Shows whether the router is using a fixed or dynamic IP address on the Internet port. If the value is DHCP, the router obtains an IP address dynamically from the ISP or from a DHCP server on your LAN.
- **IP Subnet Mask**. The IP subnet mask that the Internet port of the router uses.
- **Domain Name Server**. The Domain Name Server address that the router uses. A Domain Name Server translates human-language URLs such as www.netgear.com into IP addresses.

Statistics

The router provides various statistics.

➢ **To view the traffic statistics:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

   The Router Status screen displays.

3. In the Internet Port pane, click the **Show Statistics** button.

   A pop-up screen displays traffic statistics:

System Up Time 00:07:14

Port	Status	TxPkts	RxPkts	Collisions	Up Time
WAN	100M/Full	460	1712	0	00:06:40
LAN1	Link down				--
LAN2	Link down	3463	7595	0	--
LAN3	100M/Full				00:06:43
LAN4	Link down				--
WLAN b/g/n	300M	0	0	0	00:06:49

Poll Interval: 5 (secs) [Set Interval] [Stop]

The following information displays:

- **System Up Time**. The time elapsed since the router was last restarted.
- **Port**. The statistics for the WAN (Internet) port and the four LAN (Ethernet) ports.
- **Status**. The link status of the port.
- **TxPkts**. The number of packets transmitted on this port since reset or manual clear.
- **RxPkts**. The number of packets received on this port since reset or manual clear.
- **Collisions**. The number of collisions on this port since reset or manual clear.
- **Up Time**. The time elapsed since this port acquired the link.

- **Poll Interval**. The interval at which the statistics are updated on this screen.

4. To change the polling frequency, enter a time in seconds in the **Poll Interval** field, and click the **Set Interval** button.

5. To stop the polling entirely, click the **Stop** button.

Connection Status

The content of this screen depends on the type of connection. For example, different information is shown for a PPPoE connection than for a DHCP connection.

➢ **To view the connection status:**

1. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

   The Router Status screen displays.

3. In the Internet Port pane, click the **Connection Status** button.

   The Connection Status pop-up screen displays. The following figure shows the connection status information for a DHCP connection.
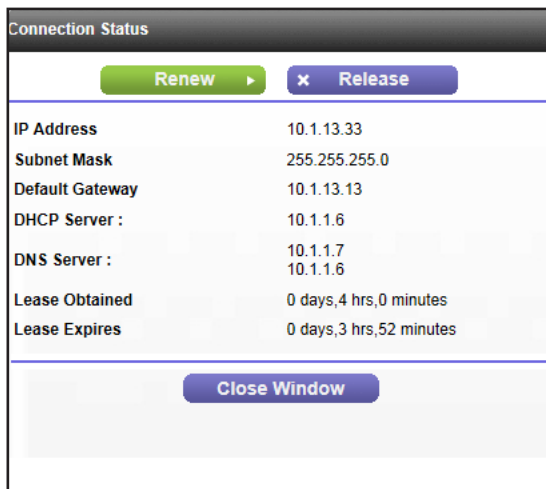
The content of the Connection Status pop-up screen depends on the type of connection. You can start new connections and end existing connections from this screen.

The following list describes the different types of connections and the associated settings that display on the Connection Status pop-up screen:

- **DHCP connection**:

   The following information displays for a DHCP connection:

   - **IP Address**. The IP address that is assigned to the router.
   - **Subnet Mask**. The subnet mask that is assigned to the router.

- **Default Gateway**. The IP address for the default gateway that the router communicates with.

- **DHCP Server**. The IP address for the Dynamic Host Configuration Protocol server that configures the TCP/IP for all the computers that are connected to the router.

- **DNS Server**. The IP address of the Domain Name Service server that translates of network names to IP addresses.

- **Lease Obtained**. The date and time when the lease was obtained.

- **Lease Expires**. The date and time that the lease expires.

Choose any of the following actions:

a. To release the router's IP address and terminate the Internet connection, click the **Release** button.

b. To let the router acquire an IP address from the DHCP server and start the Internet connection, click the **Renew** button.

c. To close the Connection Status screen, click the **Close Window** button.

The content of the Connection Status pop-up screen depends on the type of connection.

- **PPPoE connection**:

  The **Connect** and **Disconnect** buttons in the Connection Status screen display only when the connection mode is Manually Connect.

  The following information displays for a PPPoE connection:

  - **Connection Time**. The time that elapsed since the connection was established.

  - **Connection Status**. The status of the connection: Connected, Disconnected, Negotiation (---, Success), or Authentication (---, Success). --- indicates failure.

  - **IP Address**. The IP address that is assigned to the router.

  - **Subnet Mask**. The subnet mask that is assigned to the router.

  Choose any of the following actions:

  a. To establish the PPPoE connection manually, click the **Connect** button.

  b. To terminate the PPPoE connection manually, click the **Disconnect** button.

  c. To close the Connection Status screen, click the **Close Window** button.

The content of the Connection Status pop-up screen depends on the type of connection.

- **PPTP connection**:

  The **Connect** and **Disconnect** buttons in the Connection Status screen display only when the connection mode is Manually Connect.

  The following information displays for a PPTP connection:

  - **Connection Status**. The status of the connection: Connected or Disconnected.

  - **IP Address**. The IP address that is assigned to the router.

  - **Subnet Mask**. The subnet mask that is assigned to the router.

Choose any of the following actions:

a. To establish the PPTP connection manually, click the **Connect** button.

b. To terminate the PPTP connection manually, click the **Disconnect** button.

c. To close the Connection Status screen, click the **Close Window** button.

Wireless Settings Pane

➢ **To display the Wireless Settings pane:**

1. Log in to the router.

    For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

    The Router Status screen displays. The Wireless Settings pane is located in the lower left of the screen.

    The following information displays:

    • **Name (SSID)**. The wireless network name (SSID) that the router uses.

    • **Region**. The geographic region where the router is used. It might be illegal to use the wireless features of the router in some parts of the world.

    • **Channel**. The operating channel of the wireless port. The default channel is Auto. When Auto is selected, the router finds the best operating channel available.

    • **Mode**. The wireless communication mode: Up to 54 Mbps, Up to 150 Mbps (the default), or Up to 300 Mbps.

    • **Wireless AP**. Indicates whether the radio of the router is enabled. If the radio is not enabled, the WiFi LED on the front panel is off.

    • **Broadcast Name**. Indicates whether the router is broadcasting its SSID.

    • **Wireless Isolation**. Indicates whether wireless isolation is on or off. When it is off, wireless clients (computers or wireless devices) that join the network can use the Internet, but cannot access each other or access Ethernet devices on the network.

    • **Wi-Fi Protected Setup**. Indicates whether Wi-Fi Protected Setup is configured for this network.

Guest Network Pane

➢ **To display the Guest Network pane:**

1. Log in to the router.

    For more information, see *Log In to Your Router After Installation* on page 18.

2. Click the **ADVANCED** tab.

    The Router Status screen displays. The Guest Network pane is located in the lower right of the screen.

The following information displays:

- **Name (SSID)**. The wireless network name (SSID) that the router uses. The default name is NETGEAR-Guest.
- **Wireless AP**. Indicates whether the radio of the router is enabled for the guest network.
- **Broadcast Name**. Indicates whether the router is broadcasting its SSID for the guest network.
- **Wireless Isolation**. Indicates whether wireless isolation is on or off for the guest network. When it is off, wireless clients (computers or wireless devices) that join the guest network can use the Internet, but cannot access each other or access Ethernet devices on the network.
- **Allow guest to access My Local Network**. Indicates whether wireless clients on the guest network can access your local network, instead of only the Internet and other wireless clients on the guest network.

Troubleshooting 8

Find and fix problems

This chapter provides information to help you diagnose and solve problems that you might have with your router. If you do not find the solution here, visit the NETGEAR support site at *http://support.netgear.com* for product and contact information.

This chapter contains the following sections:

- *Quick Tips*
- *Troubleshoot with the LEDs*
- *Cannot Log In to the Router*
- *Cannot Access the Internet*
- *Changes Not Saved*
- *Wireless Connectivity*
- *Troubleshoot Your Network Using the Ping Utility*

Quick Tips

The following describes tips for troubleshooting some common problems:

- *Sequence to Restart Your Network* on page 80
- *Check Ethernet Cable Connections* on page 80
- *Wireless Settings* on page 80
- *Network Settings* on page 80

Sequence to Restart Your Network

➢ **Make sure to restart your network in this sequence:**

1. Unplug *and* turn off the cable or DSL broadband modem.
2. Turn off the router and computers.
3. Plug in the cable or DSL broadband modem and turn it on. Wait two minutes.
4. Turn on the router and wait two minutes.
5. Turn on the computers.

Check Ethernet Cable Connections

Make sure that the Ethernet cables are securely plugged in:

- The Internet LED on the router is lit when the Ethernet cable connecting the router and the modem is plugged in securely and the modem and router are turned on.
- For each powered-on computer connected to the router by an Ethernet cable, the corresponding numbered router Ethernet port LED is lit.

Wireless Settings

Make sure that the wireless settings in the computer and router match exactly.

- For a wirelessly connected computer, the wireless network name (SSID) and wireless security settings of the router and wireless computer must match exactly.
- If you set up an access list in the Advanced Wireless Settings screen, you must add each wireless computer's MAC address to the router's access list.

Network Settings

Make sure that the network settings of the computer are correct:

- Wired and wirelessly connected computers must have network IP addresses on the same network as the router. The simplest way to meet this requirement is to configure each computer to obtain an IP address automatically using DHCP.

- Some cable modem service providers require you to use the MAC address of the computer initially registered on the account. You can view the MAC address in the Attached Devices screen (see *Attached Devices* on page 34).

Troubleshoot with the LEDs

After you turn on power to the router, the following sequence of events occurs:

1. When power is first applied, verify that the Power LED is on.

2. Verify that the Power LED turns amber within a few seconds, indicating that the self-test is running.

3. After approximately 30 seconds, verify the following:

    - The Power LED is solid green.

    - The Internet LED is lit.

    - A numbered LAN Ethernet port LED is on for any local port that is connected to a computer. This condition indicates that a link has been established to the connected device.

You can use the LEDs on the front panel of the router for troubleshooting.

Power LED Is Off or Blinking

If the Power LED is Off or blinking, try the following:

- Make sure that the power cord is securely connected to your router and that the power adapter is securely connected to a functioning power outlet.

- Make sure that you are using the power adapter that NETGEAR supplied for this product.

- If the Power LED blinks slowly and continuously, the router firmware is corrupted. This situation can happen if a firmware upgrade is interrupted, or if the router detects a problem with the firmware. If the error persists, you have a hardware problem. For recovery instructions or help with a hardware problem, contact technical support at *www.netgear.com/support*.

Power LED Stays Amber

When the router is turned on, the Power LED turns amber for about 20 seconds and then turns green. If the LED does not turn green, the router has a problem.

If the Power LED is still amber one minute after you turn on power to the router, try the following:

- Turn off the power and back on to see if the router recovers.

- To return the router to its factory settings, press and hold the **Restore Factory Settings** button.

    For more information, see *Factory Settings* on page 90.

If the error persists, you might have a hardware problem. Contact technical support at *www.netgear.com/support*.

All LEDs Remain Lit After Startup

When the router is turned on, the LEDs light for about 10 seconds and then turn off. If all the LEDs stay lit, a fault exists within the router.

If all LEDs are still lit one minute after power-up, try the following:

- Turn off the power and back on to see if the router recovers.
- To return the router to its factory settings, press and hold the **Restore Factory Settings** button.

  For more information, see *Factory Settings* on page 90.

If the error persists, you might have a hardware problem. Contact technical support at *www.netgear.com/support*.

Internet or Ethernet Port LEDs Are Off

If one of the Ethernet port LEDs or the Internet LED does not light when the Ethernet connection is made, check the following:

- Make sure that the Ethernet cable connections are secure at the router and at the modem or computer.
- Make sure that power is turned on to the connected modem or computer.
- Be sure that you are using the correct cable.

  When you connect the router's Internet port to a cable or DSL broadband modem, use the cable that was supplied with the cable or DSL broadband modem. This cable can be a standard straight-through Ethernet cable or an Ethernet crossover cable.

WiFi LED Is Off

If the WiFi LED stays off, check to see if the WiFi On/Off button on the router has been pressed. This button turns the wireless radio in the router on and off. The WiFi LED is lit when the wireless radio is turned on.

WPS Button Blinks Amber

If, after you use the Push 'N' Connect (WPS) function, the WPS LED blinks green rapidly, check the following:

- Make sure that you have used the WPS button on the front of the router and not the WPS Wizard on the Add WPS Client screen.
- Check that PIN verification succeeded for the wireless device that you are adding to the wireless network.

- Make sure that you have not pressed the WPS button on the front of the router after disabling the WPS feature (you logged in to the router and disabled this feature previously).

- Check to see if the router is stuck in the AP setup locked state (if you are using the wireless repeater function). To resolve this situation, either restart the router, or do the following:

  1. Select **ADVANCED > Advanced Setup > Wireless Settings**.

     The Advanced Wireless Settings screen displays.

  2. Select the **Enable Router's PIN** check box.

  3. Click the **Apply** button.

Cannot Log In to the Router

If you are unable to log in to the router from a computer on your local network, check the following:

- If you are using an Ethernet-connected computer, check the Ethernet connection between the computer and the router as described in *Check Ethernet Cable Connections* on page 80.

- Make sure that your computer's IP address is on the same subnet as the router. If you are using the recommended addressing scheme, your computer's address is in the range of 192.168.1.2 to 192.168.1.254.

- If your computer's IP address is shown as 169.254.x.x, recent versions of Windows and Mac OS generate and assign an IP address if the computer cannot reach a DHCP server. These autogenerated addresses are in the range of 169.254.x.x. If your IP address is in this range, check the connection from the computer to the router, and reboot your computer.

- If your router's IP address was changed and you do not know the current IP address, clear the router's configuration to factory defaults. This sets the router's IP address to 192.168.1.1. This procedure is explained in *Factory Settings* on page 90.

- Make sure that your browser has Java, JavaScript, or ActiveX enabled. If you are using Internet Explorer, click the **Refresh** button to be sure that the Java applet is loaded.

- Try quitting the browser and launching it again.

- Make sure that you are using the correct login information. The factory default login name is admin and the password is password. Make sure that Caps Lock is off when you enter this information.

- If you are attempting to set up your NETGEAR router as a replacement for an ADSL gateway in your network, the router cannot perform many gateway services. For example, the router cannot convert ADSL or cable data into Ethernet networking information. NETGEAR does not support such a configuration.

Cannot Access the Internet

If you can access your router but you are unable to access the Internet, first determine whether the router can obtain an IP address from your Internet service provider (ISP). Unless your ISP provides a fixed IP address, your router requests an IP address from the ISP. You can see whether the request was successful using the Router Status screen.

➢ **To check the WAN IP address:**

1. Start your browser and select an external site such as *http://www.netgear.com*.
2. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.

3. Click the **ADVANCED** tab.

   The Router Status screen displays.

4. In the Internet Port pane, check that an IP address is shown for the Internet port.

   If 0.0.0.0 is shown, your router has not obtained an IP address from your ISP.

   For more information about the Internet Port pane, see *Internet Port Pane* on page 73.

If your router cannot obtain an IP address from the ISP, you might need to force your cable or DSL broadband modem to recognize your new router by restarting your network. For more information, see *Sequence to Restart Your Network* on page 80.

If your router is still unable to obtain an IP address from the ISP, the problem might be one of the following:

* Your Internet service provider (ISP) might require a login program.

  Ask your ISP whether it requires PPP over Ethernet (PPPoE) or some other type of login.

* If your ISP requires a login, the login name and password might be set incorrectly.
* Your ISP might check for your computer's host name.
  Assign the computer host name of your ISP account as the account name in the Internet Setup screen.
* Your ISP allows only one Ethernet MAC address to connect to Internet and might check for your computer's MAC address. In this case, do one of the following:

  - Inform your ISP that you have bought a new network device, and ask them to use the router's MAC address.
  - Configure your router to clone your computer's MAC address.

Troubleshoot Internet Browsing

If your router can obtain an IP address, but your computer is unable to load any web pages from the Internet, it might be for the following reasons:

* Your computer might not recognize any DNS server addresses.

A DNS server is a host on the Internet that translates Internet names (such as www addresses) to numeric IP addresses. Typically, your ISP provides the addresses of one or two DNS servers for your use. If you entered a DNS address during the router's configuration, reboot your computer, and verify the DNS address. You can configure your computer manually with DNS addresses, as explained in your operating system documentation.

- Your computer might not have the router configured as its TCP/IP gateway.

  If your computer obtains its information from the router by DHCP, reboot the computer, and verify the gateway address.

- You might be running login software that is no longer needed.

  If your ISP provided a program to log you in to the Internet (such as WinPoET), you no longer need to run that software after installing your router. If you use Internet Explorer as your browser, you might need to select **Tools > Internet Options**, click the **Connections** tab, and select the **Never dial a connection** check box. Other browsers have similar options.

Troubleshoot a PPPoE Internet Connection

➢ **To troubleshoot a PPPoE Internet connection:**

1. Start your browser and select an external site such as *http://www.netgear.com*.
2. Log in to the router.

   For more information, see *Log In to Your Router After Installation* on page 18.
3. Click the **ADVANCED** tab.

   The Router Status screen displays.
4. On the Internet Port pane, click the **Connection Status** button.

   For more information, see *Connection Status* on page 75. If the fields show valid information, including valid IP addresses, your PPPoE connection is up and working.

   If any of the fields show incomplete information, or no valid IP address, you can attempt to reconnect by clicking the **Connect** button. The router continues to attempt to connect indefinitely.

If you cannot connect after several minutes, you might be using an incorrect service name, user name, or password. There might also be a provisioning problem with your ISP.

Note: Unless you connect manually, the router does not authenticate using PPPoE until data is transmitted to the network.

Changes Not Saved

If the router does not save the changes you make through the NETGEAR genie screens, check the following:

- When you enter configuration settings on a screen, always click the **Apply** button before you move to another screen or tab, or your changes are lost.

- Click the **Refresh** or **Reload** button in the web browser. The changes might have occurred, but the old settings might be in the web browser's cache.

Wireless Connectivity

If you are having trouble connecting wirelessly to the router, try to isolate the problem by checking the following:

- Does the wireless device or computer that you are using find your wireless network?

  If not, check the WiFi LED on the front of the router. If it is not lit, you can press the **WiFI On/Off** button on the front of the router to turn the router's wireless radio back on.

  If you disabled the router's SSID broadcast, your wireless network is hidden and does not display in your wireless client's scanning list. By default, SSID broadcast is enabled.

- Does your wireless device support the security that you are using for your wireless network (WEP, WPA, or WPA2)?

- If you want to view the wireless settings, select **BASIC > Wireless Settings**. For more information, see *Basic Wireless Settings* on page 28.

If your wireless device finds your network, but the signal strength is weak, check these conditions:

- Is your router too far from your computer, or too close? Place your computer near the router, but at least 6 feet (2 meters) away, and see whether the signal strength improves.

- Is your wireless signal blocked by objects between the router and your computer?

Troubleshoot Your Network Using the Ping Utility

Most network devices and routers contain a ping utility that sends an echo request packet to the designated device. The device then responds with an echo reply. You can troubleshoot a network by using the ping utility on your computer or workstation.

Test the LAN Path to Your Router

You can ping the router from your computer to verify that the LAN path to your router is set up correctly.

➢ **To ping the router from a computer running Windows:**

1. From the Windows toolbar, click the **Start** button and select **Run**.

2. In the field provided, type **ping** followed by the IP address of the router, as in this example:

   ping www.routerlogin.net

3. Click the **OK** button.

   You should see a message like this one:

   ```
   Pinging <IP address > with 32 bytes of data
   ```

   If the path is working, you see this message:

   ```
   Reply from < IP address >: bytes=32 time=NN ms TTL=xxx
   ```

   If the path is not working, you see this message:

   ```
   Request timed out
   ```

If the path is not functioning correctly, you might have one of the following problems:

- Wrong physical connections

  For a wired connection, make sure that the numbered Ethernet port LED is lit for the port to which you are connected.

  Check that the appropriate LEDs are on for your network devices. If your router and computer are connected to a separate Ethernet switch, make sure that the link LEDs are lit for the switch ports that are connected to your computer and router.

- Wrong network configuration

  Verify that the Ethernet card driver software and TCP/IP software are both installed and configured on your computer.

  Verify that the IP address for your router and your computer are correct and that the addresses are on the same subnet.

Test the Path from Your Computer to a Remote Device

After verifying that the LAN path works correctly, test the path from your computer to a remote device.

1. From the Windows toolbar, click the **Start** button and select **Run**.

2. In the field provided, type:

   ping -n 10 <*IP address*>

   where <*IP address*> is the IP address of a remote device such as your ISP DNS server.

If the path is functioning correctly, replies like those examples shown in *Test the LAN Path to Your Router* on page 86 are displayed.

If you do not receive replies, try the following:

- Check that your computer has the IP address of your router listed as the default gateway. If a DHCP server assigns the IP configuration of your computer, this information is not visible on your computer's Network Control Panel. Verify that the IP address of the router is listed as the default gateway.

- Check to see that the network address of your computer (the portion of the IP address specified by the subnet mask) is different from the network address of the remote device.

- Check that your cable or DSL broadband modem is connected and functioning.

- If your ISP assigned a host name to your computer, enter that host name as the account name in the Internet Settings screen.

- Your ISP might be rejecting the Ethernet MAC addresses of all but one of your computers.

Many broadband ISPs restrict access by allowing traffic only from the MAC address of your broadband modem, but some ISPs additionally restrict access to the MAC address of a single computer connected to that modem. If this is the case, configure your router to clone or spoof the MAC address from the authorized computer.

Supplemental Information A

Additional details

This appendix provides factory default settings and technical specifications for the JNR1010v2 N150 Wireless Router:

- *Factory Settings*
- *Technical Specifications*

Factory Settings

You can return the router to its factory settings. Use the end of a paper clip or some other similar object to press and hold the **WPS/Reset** button on the back panel of the router for at least four seconds. The router resets, and returns to the factory settings that are shown in the following table.

Table 4. JNR1010v2 router factory default settings

Feature		Default Behavior
Router login	User login URL	www.routerlogin.com or www.routerlogin.net
	User name (case-sensitive)	admin
	Login password (case-sensitive)	password
Internet connection	WAN MAC address	Use default hardware address
	WAN MTU size	1500
	Port speed	AutoSensing
Local area network (LAN)	LAN IP	192.168.1.1
	Subnet mask	255.255.255.0
	DHCP server	Enabled
	DHCP range	192.168.1.2 to 192.168.1.254
	Time zone	United States is Pacific Time; otherwise, varies by region
	Time zone adjusted for daylight saving time	Disabled
Wireless	Wireless communication	Enabled
	SSID name	Preset. For information, see the router label. (For a description of the router label, see *Label* on page 11.)
	Network key (password)	
	Broadcast SSID	Enabled
	Transmission speed	Auto **Note:** Maximum wireless signal rate derived from IEEE Standard 802.11 specifications. Actual throughput varies. Network conditions and environmental factors, including volume of network traffic, building materials and construction, and network overhead lower actual data throughput rate.
	Country/region	United States in the US; otherwise, varies by region
	RF channel	Auto
	Operating mode	Up to 150 Mbps

Table 4. JNR1010v2 router factory default settings (continued)

Feature		Default Behavior
Wireless (continued)	20/40 MHz coexistence	Enabled
	Data rate	Best
	Output power	Full

Technical Specifications

Table 5. JNR1010v2 router specifications

Feature	Description
Data and routing protocols	TCP/IP, RIP-1, RIP-2, DHCP, PPPoE, PPTP, Bigpond, Dynamic DNS, UPnP, and SMB
Power adapter	• North America: 120V, 60 Hz, input • UK, Australia: 240V, 50 Hz, input • Europe: 230V, 50 Hz, input • All regions (output): 12 VDC @ 1A, output
Dimensions	217.74 x 147.73 x 34.92 mm (8.57 x 5.81 x 1.37 in.)
Weight	0.41 kg (0.91 lb)
Operating temperature	0° to 40°C (32° to 104°F)
Operating humidity	90% maximum relative humidity, noncondensing
Electromagnetic emissions	FCC Part 15 Class B VCCI Class B EN 55 022 (CISPR 22), Class B C-Tick N10947
LAN	10BASE-T or 100BASE-Tx, RJ-45
WAN	10BASE-T or 100BASE-Tx, RJ-45
Wireless	Maximum wireless signal rate complies with the IEEE 802.11 standard. See the entry for Transmission speed in *Table 4* on page 90.
Radio data rates	Auto Rate Sensing
Data encoding standards	IEEE 802.11n version 2.0 IEEE 802.11n, IEEE 802.11g, IEEE 802.11b 2.4 GHz
Maximum computers per wireless network	Limited by the amount of wireless network traffic generated by each node (typically 50–70 nodes)
Operating frequency range	2.412–2.462 GHz (US) 2.412–2.472 GHz (Japan) 2.412–2.472 GHz (Europe ETSI)
802.11 security	WEP, WPA-PSK, WPA2-PSK, WPA-PSK + WPA2-PSK mixed mode, WPA/WPA2 Enterprise